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Editor :

Prof. Baidyanath Misra

17, Saheed Nagar

Bhubaneswar

ORISSA ECONOMICS ASSOCIATION

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COLONIAL LEGACY

Though in the last 60 years there has been impressive growth in higher education, with a large increase in Universities and Deemed Universities (from 30 to 300), colleges (from 750 to about 18000) and less than 10 students (from 0.2 million to 17 million), the spread of higher education has still been confined to per cent of Indian population in the relevant age group of 17 to 23 (whereas it is almost 51% in OECD countries), and the quality of education has been far from satisfactory. It is true that the higher educational system has produced a few outstanding academic people equipped with scientific & technological capability, but by and large, the higher education is neither quite relevant nor effective to meet the challenges of the 21st century. Even Kothari Commission in its report (in the later part of sixties) pointed out that there is a general feeling in India that the situation in higher education is unsatisfactory and even alarming in some ways, that the average standard has been falling and that rapid expansion has resulted in lowering quality. During the British period, higher education remained an integral element of colonial underdevelopment. Apart from the fact that it did not serve Indian interests, there were a number of other distortions for which it was called dysfunctional. The elements of higher education which dominated the British period may be described as (a) low level of enrolment, (b) liberal nature of education, (c) concentration of higher education in and around selected port centres which served as a suction mechanism for exploitation and (d) denial or unfair deal to the most of the weaker sections of the community.

Though there were different motives in introducing higher education, it can be generalised that the colonial rulers used this device to create a set of educated people who can assist the government to perpetuate its rule in India and insulate the local people against the tides of modern industrial and scientific culture. Macaulay once said, 'We must at present do our best to form a class who may be interpreters between us and the millions we govern, a class of persons Indians in

blood and colour but English in taste, in opinions, in morals and in intellect'. And, as a matter of fact, a number of Indians who served the British were thoroughly denationalised, looking with contempt everything that was Indian. But the very same education gradually created an awakening in the country which developed a spirit of self respect and national consciousness. Today it is recognised that education is not only an important element in improving high intellectual standards, but also to provide right kind of leadership for social and economic improvement and strive to promote equality and social justice by reducing social and cultural differences through diffusion of education.

NEED FOR INTELLECTUAL ADVENTURE

Radhakrishnan Commission has pointed out that Universities are the homes of intellectual adventure. This implies that the Universities would seek and cultivate new knowledge, engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new needs and discoveries. The intellectuals who come out from the Universities should give up the fatal obsession of the perfection of the past, that greatness is not to be attained in the present, that everything is already worked out and all that remains for the future ages of the world is pedantic imitation of the past. When they are hypnotised by our own past achievements, when all their efforts are to repeat a past success, they become fetish worshippers. If our cultural life is to retain its dynamism, they must give up idolatry of the past and strive to realise new dreams. This does not mean that they should blindly give up the great values of our past nor should they cling to beliefs simply because they are ancient. They should accept so much of ancient thought as is sympathetic to us. In other words, the chief source of spiritual nourishment for any people must be its own past perpetually rediscovered and renewed. Past is not to be treated as drag but as a strong launching pad for the future.

But the saddening fact is that in spite of tremendous development in education since independence, we have not been able to eliminate fanaticism in the country. We have a set of educated people who denounce everything that is modern, romanticise the past and even disregard the developments in science and technology which have revolutionised the social and economic life of the country. On the other, there are also people who look to the past with contemptuous feelings and worship the present with great reverence. Both these attitudes do

not help to either promote cultural heritage nor the scientific outlook. A society without the knowledge of the past which has made it would be lacking in depth and dignity. Similarly, a society without scientific discoveries and technological improvements will remain stagnant for ever. The present which moves backwards and forwards, which is a summary of the past and a prophecy of the future, is, as pointed out by Radhakrishnan Commission, hallowed ground and we who tread on it should face it with quality of reverence and the spirit of adventure.

Again education should not mean accumulation of facts. Since education is both a training of minds and a training of souls, it should give both knowledge and wisdom. Plato distinguishes between factual information and understanding. Radhakrishnan Commission points out that no amount of factual information would make ordinary men into educated or virtuous men unless something is awakened in them, an innate ability to live the life of the soul. This implies that universities should train intellectuals who become the sanctuaries of the inner life of the nation.

But what we see in Universities is outdated content and dubious quality of education. As stated by Deputy Director-General of UNESCO: "The learning techniques... remain the same: the rote method, the technique of cramming, and, once the examination menace is passed, of forgetting all these useless impediments. The examination system is not an evaluation of a student's personality and intellectual equipment, his powers of thinking for himself, reflection, and reasoning... Looked at as a business enterprise, the school and college present deplorable spectacle. We find in education antediluvian technology which would not survive for an instant in any other economic sector. The teaching methods and learning techniques... are rusty, cranky and antiquated'. In the words of T. S. Eliot,

Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?

All this implies that accumulation of facts cannot increase knowledge or wisdom. What is more, the acquisition of college certificates and higher degrees may not necessarily be associated with the students' improved ability to undertake productive work. Higher education is supposed to provide society with competent men and women trained in agriculture, medicine, science, and technology and various

other professions, which can provide necessary technical know-how for bringing about economic change of the country. It may be noted here that growing influence of telecommunications and advances of information technology have significantly influenced human life and provided an opportunity to expand the range of services & create new ways of delivery of the essential product of the Universities, the Knowledge. The higher education system has to accept this changing environment and mould the economic and social system to overcome the traditional boundaries.

Attainment of scientific know-how is one important element of educational attainments. This will make educational system more relevant to meet the social needs of modem age. It may also be noted here that a degree is not the end of education, because examinations cannot end the trials of life. Arnold Toynbee has rightly said, "It is both absurd and unjust to classify a person once for all as being first class or third class when he is only twenty two years old. There are slow growers who blossom late in life and conversely there are brilliant starters who fail to fulfil their early promise".

AGENTS OF CHANGE

What we mean is that the Colleges or Universities cannot be rated high or low only on the basis of number of professional graduates they produce. If these graduates, even with first class, do not develop any self reliance and only search for cozy jobs for maintaining their livelihood or to improve their economic status, they fail to discharge their duties to solve the real needs of development. The Colleges and Universities are supposed to produce trained men and women who can function as agents of economic change. It has been said that human resources constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, utilise natural resources, build economic organisations and carry forward national development.

If a University is unable to develop the skills and knowledge of its students and the latter fail to utilise them effectively for national reconstruction, education does not serve any purpose. On the other hand, education may encourage attitudes and aspirations which are inimical to national interests. It has been observed at different levels that some of the educated people have become so self-centred that

they do not think they have any obligation to the society. They try to improve their private interest even sometimes at the cost of the society.

If education does not create attitudes and values which can create a good life in individuals and society, it does not serve any social purpose. Particularly in case of India, the 'social' cost of education (i.e., the opportunity cost to society as a whole resulting from the need to finance costly educational expansion at higher levels when these limited funds might be more productively used in other sectors of the economy) increases rapidly as students climb the educational ladder. And the private costs (those borne by the student himself) increase more slowly or indeed may decline. When the society incurs so much expenditure for providing training to the students of higher education, they should try to do something to improve social life. In fact, education is not worth a penny for the learners if it does not help them to serve the community.

In an assessment of higher education, Moonis Raza also points out that education can be efficient and equitable if the majority of people, the poorer having proportionately more opportunities, are able to benefit from it; it is both inefficient and iniquitous if only the affluent minority succeeds in garnering all the benefits. Education at higher level, particularly in developing countries should aim at (a) changing social structures in response to the needs of time, (b) assisting in the process of economic development, particularly of rural areas where vast majority of people live in poverty and squalor, and (c) establishing close links with Indian cultural traditions.

All these three aspects have special relevance for India. Changing social structure will enable men to meet the challenges of fast-changing future. As Arnold Toynbee has said, civilisation is not a harbour, but a voyage. In a voyage, we meet a number of impediments. An old society like ours is steeped in many undesirable elements like superstition, exclusiveness, casteism, regionalism, linguism, etc. Human values and aspirations cannot survive without a thorough change in cultural and social milieu of the society. Education should serve as a route to social mobility.

QUEST FOR QUALITY OF LIFE

Education at the technical level should see that our people are on the move for a life of prosperity and abundance. Poverty anywhere is a danger to peace everywhere. Since educated people have the privilege

of knowledge and technique, they should utilise such resources to ameliorate the economic condition of poor people. Growth with equity is one of the major objectives of Indian Planning. Growth without equity increases structural disequilibrium, perpetuates poverty which is itself a constraint to growth. And Equity without growth is, as pointed out by Moonis Raza and others, a stagnant cesspool wherein only misery, ignorance, obscurantism and superstition can be equitably distributed. Though the Government in a developing country has to play a dominant role in removing poverty and unemployment and accelerate the process of development, the educated and enlightened have to take active interest and participate in this social and economic change.

Gandhiji analysing the concept of Antyodaya once gave the following Mantra:

> *I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test:*
>
> *Recall the face of the poorest and the weakest man whom you may have seen & ask yourself if the step you contemplate is going to be of any use to him, will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to Swaraj for the hungry and spiritually starving millions?*

And the most important aspect of education is that the Indian Universities should be integrated into Indian life. As pointed out by Prem Kirpal in his "Role of Universities as Agents of Change", the Indian intellectual remains a cultural displaced person, nostalgically treasuring his threads of communication with western countries. The intellectual community is still divorced from traditional culture as a result of which there is a complete alienation of these educated people with common people of villages. Pandit Jawaharlal Nehru addressing the convocation of Allahabad University in 1947 after independence where the writer had the privilege to be present as a student of the University pointed out, "A University stands for humanism, for tolerance, for reason, for the adventure of ideas and for the search of truth. It stands for the onward march of the human race towards even higher objectives. If the Universities discharge their duties adequately, then it is well with the nation and the people". All this implies that educated people should

change their outlook and give a new sense of identity and quality of life to the people.

HOW CAN WE CHANGE EDUCATIONAL SYSTEM

How can we reorient the educational system so as to meet the real requirements and aspirations of the people? At present, higher education is often consigned to the citadels of elites content with their narrow specialization and remaining aloof from the problems of larger society. Since educational systems largely reflect and reproduce, rather than alter, the economic and social structure of the societies in which they exist, any programme or set of policies designed to make education more relevant for development becomes a failure. In other words, it does not respond to the needs of changing social structure. On the other hand, the content of education reflects, as pointed out by Malcolm S. Adiseshiah, the values of the dominant class. He, therefore, asserts that we cannot have an educational system promoting knowledge, discipline, equity and truth unless we have a society embodying them. While education can be a pace setter for society, equally and even more, education, including the University, is also alas, a faithful mirror of society.

Though an improvement in the social system is an important problem and requires a number of revolutionary changes we cannot deal with such a problem in an essay on educational development. We will therefore, confine our attention to changes in educational system which can serve the interests of common man. There are many areas where some reform can be initiated to change the outlook of educated men and make the educational programmes and processes related to the needs of the changing society.

(i) Reduce Demand for Higher Education

First we have to consider why there is heavy demand for higher education. Todaro in his "The Economics of Education" points out that most people in less developed countries do not demand education for its intrinsic benefits but simply because it is the only way to get highly paid employment. These derived benefits must in turn be weighed against the costs of education. There are two aspects here. One aspect is the difference in the wage or income differential between jobs in the modern sector and those outside it which is generally called traditional sector. The demand for higher education is positively related to the

modern-traditional sector wage differential. If we can reduce such wage differentials, we can restrict the demand for higher education to a great extent. And the wage differentials can be reduced provided the productivity of the traditional sector can be increased substantially through greater investment in infrastructure and other aspects of development.

Again the demand for education is inversely related to direct private costs of education. The private cost of higher education is exceedingly low. And so long as higher education remains essentially privately free and modern sector jobs are relatively lucrative, the demand for higher education must be excessive. It is, therefore, imperative that (a) educational cost borne privately should be substantially increased, (b) the rate of educational subsidy at a higher level be reduced, and (c) the meritorious and deserving students should be given adequate assistance both by subsidy and loan so that they continue their studies without any difficulty. If these three measures are taken the demand for higher education can be curtailed to a great extent.

The educated people in modem jobs also acquire certain amount of social distinction particularly in developing countries like India. During the British period, the upper class Indian elite by supporting imperial rule enjoyed some crumbs of privilege and affluence. Even after independence and in spite of democratic set up, there was little change in cultural learning and the same alien notions continued in administration for which the employees in the modern sector, with a 'babu culture' enjoyed privileges of power and position which were denied to the people in the traditional sector. These distortions can be corrected if (a) degrees are de-linked with employment, (b) course contents are changed in conformity with national identity and (c) class room learning is integrated with rural work apart from the fact that rural sector is developed along with the urban sector with higher investment as pointed out earlier.

(ii) Abolition of Degrees

The University degrees now determine the employment pattern. That is the main reason why large number of students take admission in colleges and Universities to secure degrees. Award of degrees necessarily leads to examinations which are, according to Malcolm, the single most generator of corruption, cheating, violence, to being an unscientific exercise. Examinations proliferate the production of profuse

note books and coaching classes. Education therefore, becomes a business. The University's objective of learning becomes distorted with cramming of points enumerated in note books. The students do not read original books, do not apply their imagination and nor get a chance to think or apply their minds for solving the problems of the country. And again, universities create a number of educational outcasts called failed candidates which is a colossal waste of man power. While acknowledging the need to motivate the youth, the types of examination lead to demotivation & demoralisation. The system results in severe mental stresses and strains amongst sensitive & growing youth. The system of examination cannot be oblivious to these trends and tendencies. If degrees and examinations are eliminated, not only the number of students in higher education will be less, the quality of education will considerably improve. The employing agencies instead of depending on degree holders will devise their own system of evaluation to select candidates for their institutions.

Another advantage which would accrue from the abolition of degrees and examinations is that there would be intimate contact between the students and teachers. Because of large numbers of students, there has been an increasing measure of mechanisation and routinisation of teaching and evaluation. In the process the universities have, as pointed out by Suma Chitnis in his, 'Some Dilemmas in Higher Education' been transformed from small communities of teachers and students engaged in the quest for knowledge, to large organisations which conduct education in highly impersonal manner. The administration in the University becomes also bureaucratic in character with large number of non-academic staff in the office, in the senate, syndicate and academic council exercising tremendous influence in policy decisions of the University. Devoid of their influence in academic matters, the academic staff engage themselves in politics to secure certain privileges in the University. If the size of the University is reduced, the cultural atmosphere of the University will have a better chance to flourish.

(iii) Change in Course Programme

Another area which requires immediate attention is the change in course programme. The course programme does not respond to changes in society. In most of the cases, it is found that the content of educational programmes reflects the value of the dominant class. The training and

skill imparted in the colleges and universities perpetuate the economic and social system instead of making any attempt to change the educational programme and make it more relevant for developmental needs. We cannot implant an educational system which is prevalent in developed countries. Each society must try to orient its own programme of educational activities to solve the basic problems of development. India's major problems are poverty, unemployment, illiteracy, squalor, etc. It is said that the University is a liberal and liberating agency for individual and social transformation. But if the educational programmes follow the traditional pattern which perpetuates the existing system of social rigidity and assists the rich to become more richer, the University loses its importance as an agent of change. It is, therefore, imperative that the course programmes should be in conformity with the real needs of a poor society. In other words the course programme should provide the students the knowledge, skill and ideas which will enable them to function efficiently in rural environment.

Gandhiji analysing the importance of national education & commenting on the existing mode made a pertinent remark in 1921 which is even valid today. According to him, "the student is never taught to have any pride in his surroundings. The higher he goes (in the field of education) the farther he is removed from his home, so that at the end of his education, he becomes estranged from his surroundings. He feels no poetry about his home life. The village scenes are a sealed book to him - - - . What is most unfortunate is that our educated youth suffer intellectually and emotionally an alienation from their motherland, village, community and the nation. Greater the level of education higher is the alienation. In such an environment education cannot prepare people's minds to receive new ideas & accept new tools, new relationships & new forms of organisation.

(iv) Participation of Intellectuals in Rural Work Programme

It follows from this that each student along with class room learning must take up some ameliorative activity in rural areas. This should be a part and parcel of course programme and both the teachers and students must be involved in the process of rural work. No educational system can, as pointed out by Todaro, make an effective contribution to the nation building activity if the economic and social structures in which the intelligentsia operate are inimical to the maximum participation of all people in both the work and the rewards of nation-building. The

alienation of the intellectual from the masses of people have not only divided the Indian society, but weakened the identity of the nation and distorted the methods and goals of Indian development. If we can establish a link between class room learning with rural work programme, it would help to reduce the growing gap between the poor and rich and help the University contribute its knowledge and technology to improved living conditions of the poor. This is the objective for which the educational system should work for.

CONCLUDING REMARKS

Our analysis implies a few important changes in higher education. There should not be unrestricted admission in colleges and universities. Regulation of quantity will improve the quality of education. The course programme should have some relevance to the social and economic structure of the country. Educational system should not perpetuate inequality or social rigidity. It should try to modernise the economy and also the society by active participation in developmental programmes of the country. Educated people have privileges which are denied to others. These privileges must be used for social interest. Higher education has become very costly. Particularly the cost of professional education has become enormous, to the extent of Rs.20 to Rs.30 lakhs in producing one medical or engineering graduate. Though the Government can subsidise higher education for poor and deserving students, the rich ones must bear a large part of expenditure so as to provide adequate facilities for improving training programme. And instead of awarding degrees, the Universities should try to increase the process of learning of the students which can improve their creative potential to meet the challenges of modern society. We may conclude by saying that the University is not only an academic institution, it is also a social organisation. The University has therefore, to promote new ideas, provide skilled man power and render service for the furtherance of human equality, human dignity and human development.

The system of education should be such that it should create an element of creativity, promote original thinking , sharpen human intellect and harness the great human potential which is our biggest asset to achieve overall development of the society.

We can follow the five point strategy of education as enunciated by Mashelkar in his address to the Indian Science Congress Session, held in Pune in January 2000:

(i) Women centred family
(ii) Youth centred education
(iii) Human centred development
(iv) Community centred society
(v) Innovation centred India

In point (ii) we have used youth in place of child. We guess this approach will improve an indigenous system, rooted in Indian culture, but at the same time committed to progress on par with other developed countries, based on science & technology.

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Prof. Baidyanath Misra

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39TH ANNUAL CONFERENCE: 2007

SECRETARY'S REPORT

Esteemed President Professor Mohanty, Hon'ble Chief Guest Dr. Tamotia, Revered Guest of Honour Professor Baidyanath Misra, Chairman Reception Committee and Principal, UNS Mohavidyalay, Sj. Pati, Organising Secretary Dr. Sahoo, Co-ordinator Mr. Pani, Respected Former Presidents of the Association, Members of the Organising Committee of the Conference, Distinguished Invitees, Members of the Media, Fellow Delegates, Ladies and Gentlemen.

I deem it a proud privilege to welcome you all to the 39th Annual Conference of the Orissa Economics Association. We are singularly fortunate to have in our midst Dr. Tamotia, Director Bharatiya Vidya Bhavan, Bhubaneswar Kendra and Vedanta Resources, P.I.C., London to inaugurate this Conference. We are really grateful to you Sir, for your august presence. We feel uniquely privileged to have with us our most respected teacher, the doyen of economics Professor Baidyanath Misra as the Guest of Honour for this Conference. We are extremely thankful to you Sir, for your kind gesture.

There is always a past in our present which we must be aware of, lest we become strangers. In this context, kindly let me present a brief profile of our Association. The Orissa Economics Association was founded on January 26, 1968 with the main objectives of promoting the study and improving the methods of teaching in Economics and stimulating research on economic issues of contemporary interest. It was accorded the status of a learned registered society by the Government of Orissa with Registration No-5358/32 of 1968-9, and it enjoys the unique distinction of being one of the oldest registered regional academic associations in the country with 03 Institutional Life Members, 306 Individual Life Members and 29 Annual Members. They include a galaxy of outstanding economists, professionals, executives, administrators and statesmen, besides teachers and researchers in the discipline of Economics.

The Association endeavors to achieve its objectives by organising Annual Conferences, Symposia and Wrokshops. It has the distinct honour of organising a two-day Annual Conference regularly since its inception. The Association maintains the healthy convention of discussing two topics of contemporary interest in the Conference every year of which one concerns with the Indian Economy and the other with reference to the State of Orissa. The two topics chosen for discussion for this year's Conference are:

1. **Post -Reform Crisis in Indian Agriculture**
2. **Economics of Higher Education in Orissa**

Besides these two topics, Prof. Baidyanath Misra will deliver this year's Mangaraj Memorial Lecture, an endowment lecture organised since 1987 in memory of Bhubaneswar Mangaraj, an illustrious teacher of Banki. He will talk on "Restructuring Orissa's Economy". On behalf of the Association, I express my deep sense of gratitude to Prof. Misra for having agreed to deliver the talk. I also express my reverence to Dr. D.C. Mishra, an economist of repute and a gentleman par excellence for accepting our request to Chair the Mangaraj Lecture Session.

The Association has been publishing regularly its mouthpiece, the "Orissa Economics Journal" since 1968. The Presidential Address, the Mangaraj Lecture and the papers presented in the Annual Conference are published in the Journal. The journal, edited by the noted economist Prof. Baidyanath Misra, has earned appreciation and applause from the teachers and researchers and finds a place in reputed libraries in the country.

I take this opportunity to express our deep sense of gratitude to our chief Guest Dr. Tamotia for having kindly accepted our invitation at very short notice despite his busy schedules and for inaugurating the Conference. We are equally grateful to our Guest of Honour Professor Baidyanath Misra, the guiding angel of the Association for his kind presence in the Conference and for undertaking the arduous task of editing the Orissa Economic Journal. We are greatly indebted to the Principal, Members of the Staff and Employees of UNS Mahavidyalaya, Mugpal and more particularly to the members of the local Organising Committee for the pains they have taken for hosting the Conference.

We are extremely thankful to the members of the present executive body of the Association and especially to our President Professor Bedabati Mohanty for their kind cooperation. Our special thanks are due to our respected teacher Prof. Bhabani Prasad Dash for his precious guidance and supervision in the functioning of the Association. I really owe a great deal to the dignitaries, academicians, invitees, guests, delegates and paper writers for their help in making this Conference a success and to you all ladies and gentlemen and members of the press & media for having given me a patient hearing.

With warm regards, Jai Hind

Dr. Rabi N. Patra

Secretary

Orissa Economics Association

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PRESIDENTIAL ADDRESS

EMERGING ISSUES BEFORE SMALL SCALE INDUSTRIES SECTOR

by

Dr. Bedabati Mohanty

Former Member

State Selection Board

Govt. of Orissa

Friends,

At the outset I would like to express my thanks to the members of Orissa Economics Association for giving me this opportunity to preside over the Inaugural Session of 39th Annual Conference of the Association by electing me as the President of the Association for the year 2006-07. I deem it as a privilege to present the Presidential address of annual conference before this august body of distinguished delegates. I would also like to express our thanks to the Principal, U.N. Mahavidyalaya, Mugpal and his team of dedicated teachers for hosting the 39th Annual Conference of Orissa Economics Association.

During the last 4 years between May-2002 to October-2006 more than 50 MOUs have been signed by Orissa Government with different corporate houses for establishing big industries which have brought Orissa to the limelight of discussion. This new wave of signing MOUs has created a mixed reaction in the society and Government, social activists, academicians try to interpret this from different angles. Whether all the companies who have signed MOUs will actually set up the proposed plants (a few of them have already withdrawn) and whether the investment agreed upon will materialize and if so, to what extent, is a big question. But nevertheless it apparently indicates the Govt's desire to push the state into a faster growth track through industrialization by concentrating on large scale industries.

Orissa, till today, is considered as one of the most backward states of the country. Unemployment with consequent poverty marks the lives of a significant proportion of the population. The per capita income of

the state is far below the national average and that there is a great need for capital investment for utilizing the natural resources of the state and uplifting the living standard of population can not be denied. But apart from the long list of concessions and benefits assured to the companies to attract them to Orissa, the cost of which is borne by the common man, that the big industries have been a significant source of air and water pollution can not be ignored. Waste generating models of industrialization not only impose a heavy cost on society in terms of pollution and deteriorating quality of life, but also can not be sustained in the long run. Our quest for development has to be integrated with environmental concerns in order to make the development process sustainable. In the context of pollution hazards, displacement, rehabilitation and many more problems associated with big industries on the one hand and the vital role played by small scale industries (SSIs) in the Indian economy on the other hand in terms of employment generation on a decentralized basis, creation of an entrepreneurial base, contribution to production and exports, it is felt that while planning for the faster growth of the state economy, the role of SSIs can not be underestimated and the craze for big industries can be replaced to some extent by concentrating on expansion of small scale sector. Moreover small industries assume specific significance in the context of proposed large industries in promoting ancillarization and downstream industries in the State. I have therefore chosen to speak on SSIs in Orissa, the emerging needs before them in the context of globalization and how to strengthen the small scale sector so that they can help in pushing the economy forward and improve the position of Orissa in the map of India.

WHAT IS SSI SECTOR

The SSIs though were first defined in 1950 on the basis of twin criteria of gross investment in fixed assets and work force, since 1966 the original value of plant and machinery has been the sole criterion for defining SSIs in India. The ceiling on investment in plant and machinery has been revised from time to time and the upper limit was fixed at Rs.10 million till October 2006. The SSIs sector comprises different segments such as small scale industrial undertakings, ancillary undertakings, tiny units, export oriented units, women enterprises and small scale services and business enterprises (SSSBE). This segmentation within the small scale industry sector has been undertaken at different points of time with a view to promoting SSIs in consonance

with social and economic policies of the country, encouraging technology upgradation among existing units, providing a thrust on exports, focussing on development of women entrepreneurs, focussing on the needs of tiny units and creating broader opportunities for SSI related services.

An industrial undertaking in which investment in plant and machinery does not exceed Rs.10 million was regarded as a small scale industrial undertaking. However the limit for units in select products of knitwares and hand tools was allowed upto Rs.50 million.

An industrial undertaking engaged in or is proposed to be engaged in the manufacture of parts, components or rendering of services and supplies or renders not less than 50 per cent of its production or services to one or more industrial undertaking is treated as an ancillary unit and investment in plants and machinery was also Rs.10 million.

Tiny units originally had reference to location but subsequently the reference to location was withdrawn and a manufacturing enterprise was treated as a tiny unit in which investment in plant and machinery does not exceed Rs. 25 lakhs irrespective of location of the unit.

A unit with an obligation to export at least 30 per cent of its annual production by the end of the third year of commencement of production and having an investment ceiling of Rs. 10 million is termed as an export oriented SSI unit.

An SSI unit which is managed by one or more women entrepreneurs in proprietary concerns or in which they have a share capital of not less than 51 per cent is termed as an women enterprise.

An industry related service/ business enterprise with an investment upto one million rupees in fixed assets excluding land and building was treated as small scale service and business (industry related) enterprise (SSSBE).

A new act, namely the Micro Small and Medium Enterprise Development Act, 2006 (MSMED Act, 2006) has come into operation since 2nd October, 2006 which has changed the previous definition of SSIs. The Act brings a clear cut distinction between enterprises engaged in manufacture of goods and those engaged in rendering of services.

In case of manufacturing units,

(A) a micro enterprise is one whose investment in plants and equipment does not exceed Rs. 25 lakh

(B) a small enterprise is one where investment in plants and machinery is more than Rs. 25 lakh but does not exceed Rs.5 crore.

(C) A medium enterprise is one where investment in plant and machinery is more than Rs.5 crore but does not exceed Rs.10 crore.

In case of enterprises engaged in providing or rendering of services

(a) the upper limit of investment in equipment is Rs. 10 lakh for micro enterprises

(b) for small enterprises investment in equipments is more than Rs.10 lakh but does not exceed Rs.2 crore and

(c) for medium enterprises investment in equipment is more than Rs.2 crore but does not exceed Rs.5 crore.

Inclusion of medium enterprises in small scale sector indicates the intention of Government to facilitate the promotion and development of medium enterprises for increasing the competitiveness of the small scale sector so that it is able to face the challenges emerging out of globalisation.

Performance of SSIs

Time series data available with Small Industry Development Organization (SIDO) about performance of SSIs mention the number of SSIs as 34.64 lakh in 2001-02 while the third census of the SSIs which is accepted as the first systematic effort to record the performance of SSI sector puts the number at 105.21 lakh in 2001-02. The difference in number is mainly because of coverage of both registered and unregistered units in a more systematic manner in census data. Whatever be the variance in the number of SSIs, the data supplied by both the sources nevertheless give an idea about the rising trend in the number of SSI units, production and employment generated by them in the country over the years (Annexure-1 & 2). The SIDO data reveal a compound annual rate of growth of 6.1 per cent in number of units, 8.2 per cent in production and 4.2 per cent in employment during 1990-91 to 2000-01, while the census data indicate a CARG between 1990-91 to 2003-04 of 4 per cent in number, 10.7 per cent in production and 4.3 per cent in employment. The growth rates calculated for three decades on the basis of SIDO data suggest that even though SSI sector

is expanding, the rate of growth is gradually declining in terms of number, production as well as employment generated in the sector.

The SSIs in India produce over 7500 products ranging from consumer goods to sophisticated machineries and computer peripherals. According to SIDO estimate, SSI sector accounts for about 95 per cent of the industrial units in the country and 40 per cent of the value added in manufacturing sector. SSIs rank next to agriculture in employment generation in the country. SSI sector's contribution to the country's export is estimated to be around 35 per cent. But beside the direct exports there are indirect exports of SSIs which comprise (i) production of SSIs purchased by other exporters/ trading houses/ export houses and thereafter exported under their own consignments and (ii) parts and components manufactured by SSIs but incorporated by other large industries in the manufacture of final products that they export although estimates of the share of SSIs in the indirect export earnings place the figure at around 10 per cent of total exports of the country. Thus the share of SSIs in the total exports of the country could be placed at around 45 per cent.

Efficiency of SSIs

According to third census of SSI sector, employment generated in small scale sector per Rs. 1 lakh investment is 1.39 as against only 0.20 in respect of large scale manufacturing sector covered through Annual Survey of Industries (ASI). This means that the organized sector requires an investment of Rs. 5 lakh to generate employment of one person, whereas the SSI sector generates employment for seven persons with the same investment. With regard to investment output ratio also, the SSI sector fares almost at par with the organized sector. While an investment of about Rs. 43,000 is required in the organized sector to generate an output worth Rs 1 lakh, a marginally higher investment of Rs 48,000 is required to generate the same amount of output in SSI sector. The SSIs are generally advocated in a capital scarce country like India on the ground that they are labour intensive i.e., they create more employment compared to large scale industries with the same amount of investment. But in the ultimate analysis survival of SSIs will depend on their efficiency and employment generation for the sake of employment can not be just aimed at.

Labour and capital productivities i.e., the net value added per employee and per unit of capital invested are measures of efficiency of a production unit. A comparative analysis of the efficiency in the SSI sector and LSI sector was made by SIDBI using ASI data on the factory sector for the period 1980-98. The study reveals that the relative labour productivity (ratio of labour productivity in SSI to LSI) fluctuates between 0.26 to 0.39, while the relative capital productivity varies from 1.27 to 2.10 during the period (Annexure-3). Relative labour productivity being less than one suggests that value added per employee is less in the SSI factory sector than in the large scale factory sector. The relative capital productivity on the other hand has been greater than one indicating that value added per unit of capital invested is higher in SSI factory sector as compared to large scale factory sector. The relative efficiency index was estimated in the study which is shown to be generally greater than one suggesting that SSI factory sector is more efficient than the large scale factory sector. My purpose in giving these statistics is just to emphasize that SSIs are not to be underestimated and can play an equally important role in achieving higher rate of growth for the economy with its consequent favourable impact on living standard of larger number of people which is our ultimate objective in planning for growth.

It is true that the results of the study are indicative of efficiency in the factory sector only which is a relatively small sub-sector within the total SSI sector which consists of both factory sector and the unorganized sector. If the total SSI sector is taken into account the relative productivity of capital is likely to be much lower. But never the less the study suggests that the SSIs are not just to be underestimated with the preconceived notion that they are economically inefficient. Rather the SSIs in the factory sector are very much at par with LSIs and can play a major role in pushing the economy to a higher growth track.

Positions of SSIs in Orissa in India's Map

According to third census of SSIs the total number of SSIs in Orissa is 3,88,277 constituting 3.69 per cent of total number of SSIs in the country. In case of Orissa about 82 per cent of SSI units are located in rural areas while 55 per cent of SSIs are located in rural areas taking the country as a whole. 99.89 per cent of small scale industries in Orissa are tiny units (investment in plants & machinery upto Rs.25 lakh).

According to Directorate of Industries, Orissa, during 2001-02 to 2005-06 a total number of 21,655 SSI units have been set up out of which 10935 units (50.49 per cent) belong to the category of Rs 1 lakh to Rs 5 lakh range of investment only. Tiny units might be effective in generating employment but productivity of labour in a tiny unit can not be at par with that of a comparatively bigger SSI unit, given the small size of investment in fixed assets. Orissa's share in total fixed investment in SSI sector in the country is only 1.24 per cent. This has its reflection in the contribution of SSI sector to production and as indicated by the census data, the gross output of SSI sector in Orissa accounts for 1.86 per cent of the total gross output of SSI sector in the country, though numberwise it constitutes 3.69 per cent and employment wise 3.70 per cent of total employment created in SSI sector. It is felt that there is need for attracting more and more of investment to SSI sector and increase the number of SSIs in factory sector with larger investment for increasing the efficiency of the small scale sector as a whole.

Policy Initiatives

Recognising the importance of SSI sector in the economic development of the country, several policy resolutions have been formulated ever since independence for facilitating promotion and development of SSIs in the country. The main challenge before the policy makers after independence was how to undo the setback suffered by the traditional industries of India during the British colonial rule and help the village and small industries to stand on their own feet once again. The rationale for protection to small scale sector first articulated in the 1948 industrial policy statement got embedded in the industrial policy resolution of 1956 stating "..... the aim of state policy will be to ensure that the decentralized sectors acquire sufficient vitality to be self supportive". The main consideration behind the 1956 policy resolution was promotion of employment and wide dispersal of industrial growth avoiding urban congestion and self supporting village economy based on Gandhian ideology. As a matter of fact our commitment to promoting SSIs through various concessions and exemptions has been reiterated in various policy resolutions till early 1990s. The various measures of support included reservation of items for exclusive manufacturing by SSIs, review of definition of SSI, raising the upper limit of investment from time to time, Government procurement through preferential purchase from SSIs, development of industries in backward

and rural areas etc. The policy of reservation of products for exclusive manufactur in the SSI sector was initiated in 1967 beginning with 47 items and touched a peak level of 873 items in 1984 as a promotional and protective measure for the small scale sector. SSIs, it was felt, needed government support to overcome their handicap in facing competition from LSIs. Policy of protection to SSIs, however came into severe criticism and a view emerged in many quarters that the policy of protecting small scale sector with reservation of a wide range of products and fiscal support did not bring any benefit to the society, not even to the small scale sector itself. The employment generated in the sector did not create adequate income and did not help in bringing people above the poverty line. The policy of reservation in the past rather helped in creating an army of inefficient entrepreneurs making India the unique abode of industrial sickness. During 1982-88 it is observed that sickness in SSIs increased at a rate of about 42 per cent per annum. The 1980s, in fact, was a decade of small industries sickness.

Persistent criticism from different quarters coupled with economic liberalization initiated in the early 1990s has led to rethinking on the policy of protection to small scale industries. With the opening of Indian economy the ambit of reservation for SSIs has been progressively reduced and by March, 2005 the number of items reserved for exclusive manufacture in small scale sector stood at 506 as reported by SISI in Orissa State Profile. It is not that with liberalization the policy support to SSIs has been withdrawn, but there have been policy changes depending on the changing economic scenario. Policy changes were necessitated to introduce products specific incentives and concession to small enterprises for product standardization, technology upgradation and modernization. For example, the comprehensive policy package for SSIs in 2000 provided for credit linked capital subsidy of 12 per cent against loans for technology upgradation in specified industries. The exemption for excise duty limit was raised from Rs.50 lakh to one crore to improve the competitiveness of small industries. Similarly industrial policy on SSIs in 2003-04 provided for the composite loan limit for SSI being raised from Rs.25 lakh to Rs.50 lakh. Industries with good track record were allowed dispensation of collateral requirement up to Rs.25 lakh. A Small and Medium Enterprise (SME) fund of Rs.1 crore was set up under SIDBI to solve the problem of inadequate finance for SSIs. In 2004-05 the composite loan limit was further raised to Rs.1

crore. The policy initiatives in the post reform period are more bent on growth in size of SSI units than simply multiplication of the number of SSI units. The investment limit on plant and machinery is revised from time to time so that the SSI units expand their operation and avail economies of scale. The aim is SSI should graduate into medium enterprises and provide the economy with much needed growth impetus.

Globalization and Emerging Needs

The economic reforms have resulted in intensified competition for the small scale sector both in the domestic market and in exports particularly in the consumer goods in recent years. Liberalization of foreign investment policy has resulted in a number of MNCs gate crushing into the Indian market, exposing the SSIs to challenges of competition from cheaper imports from neighbouring countries. Competition from China has posed a threat for SSIs in the country in general and Orissa in particular. Removal of restriction has resulted in almost all items reserved for small scale sector now being freely importable. Possible dumping by the competitors from abroad is also not ruled out. The world, as we know, has a few developed countries and many developing countries. Both types of countries are connected through a common factor - competitiveness. While developed countries have to market their products in a competitive way to different countries to remain as developed countries, the developing countries too have to market their products to other countries in a competitive way to get transformed as developed countries. Competitiveness in the industrial sphere has three dimensions: quality of product, cost effectiveness and supply in time. In order to improve the competitiveness of SSIs so that they are able to face the challenges emerging out of the augmented reform process, a number of financial and fiscal measures have been taken by the government. To provide access to the capital market and encourage modernization and technological upgradation in SSI sector, equity participation up to 24 per cent of the total share holding is allowed in the SSIs by other industrial undertakings including foreign collaborators. For encouraging SSIs to undertake manufacturing of export items special incentive has been provided by Government through the establishment of Export Processing Zones (EPZ). EPZs are special areas designated for providing export production at low cost. Each EPZ provides basic infrastructural facilities at reduced rate. Special economic zones have been set up and SEZs are entitled to some custom duty benefits. The

SEZs are deemed to be foreign territory for the purpose of duties and taxes. It is not only the quality of product, how it is packed also plays an important role in selling products in the external market. Developing countries as such lose a considerable part of their export earnings because of poor quality of packaging. In India, it is said, about 10 per cent of export earnings are lost due to unsatisfactory/poor packaging. Keeping this in view schemes are being introduced to educate the entrepreneurs about scientific packaging techniques. For quality upgradation in SSI sector financial incentives are designed for SSI units that acquire ISO 9000 or similar international quality standard. Provision is made for reimbursing 75 per cent of expenditure incurred to obtain ISO 9000 certification subject to a maximum of Rs.75,000.

The Small Industry Service Institute at Cuttack with its two branch offices at Rourkela and Rayagada are functioning in the State since 1958 with the objective of promoting and developing small scale industries in the State by rendering escort services. Besides helping in the preparation of detail project report, it provides consultancy services for quality improvement and product development, consultancy in managerial, marketing and financial related matters, assistance for technology upgradation, use of improved designs, process etc. Special efforts are made by SISI for export promotion of small industry products and for this purpose training programmes are conducted to impart training to the exporting and export worthy entrepreneurs about the technique of packaging so that the product is safe, attractive and at the same time cost effective. During 2002 to 2006, 3 training programmes of 4 days duration each have been conducted by SISI in which 131 candidates from different small scale industries who are interested in upgrading packaging pattern have participated. However the success is estimated to be only 30 per cent on the basis of feedback received by SISI. Further, the exporting and export worthy SSI units are recommended to participate and exhibit their products in international trade exhibitions to generate export business, cost being borne by Govt of India. Because of the sustained efforts, the small scale sector of Orissa which was traditionally exporting items like handloom products, handicrafts and jewellary, has recently started exporting engineering, chemical and allied products, pharmaceuticals, electronic and computer products as well. However there is yet much to be achieved and the contribution of the State to the total exports of the country is only 2 per

cent as against 4 per cent in case of a neighbouring State like West Bengal, according to the third census of SSI.

Traditionally a group of industrial units manufacturing same or similar products in close geographical proximity to each other are called clusters. Clustering has been recognized nationally and internationally as an engine of growth. SIDO has established technical support services through product-cum-process development centres to assist selected cluster of SSI units for different specialized product lines. A scheme on technology upgradation and management programme has been launched since 1998 by DC, SSI and it applies to cluster of industries. Lack of information is often an obstacle in the selection, acquisition and application of appropriate technology options. Under the scheme of technology upgradation provision is made for demonstration of technology to the target group of small enterprises and facilitate the delivery of technology to the user. The SIDBI is also making efforts towards developing clusters and upgradation of technology.

In the third census of SSIs a district having a hundred or more registered SSIs engaged in manufacturing the same product is considered as a cluster for that product. Using this criterion 1223 clusters covering 321 products are identified in the registered sector. In the unregistered SSI sector on the other hand with 500 or more units producing the same product located in a district, it is identified as a cluster for that product and accordingly 819 clusters are identified in the unregistered sector. It is unfortunate that only 4 clusters in the registered sector are located in Orissa as against 149 clusters in Kerela and even 54 clusters in a backward state like Bihar. In the unregistered small scale sector on the other hand out of 819 clusters 57 clusters are found in Orissa, suggesting concentration of tiny units in the small scale sector of Orissa. In the status note on prospects and problems of SSIs in Orissa prepared by SISI it is observed that many problems of infrastructure, support services, marketing etc. persist in Orissa due to lack of cluster approach development of SSIs. It is also observed in the status note that the credit absorption in small scale industry sector under the various schemes of Govt of India and SIDBI is very low in Orissa vis-a-vis other States.

In view of increasing competition being the rule of the day, size of the enterprises and the technology employed by them assume critical significance. When graduation of small units intc medium ones is being

aimed at to improve their competitiveness, efforts of the government need to be channelised for attracting more and more of investment into small scale sector also along with large scale sector. What is needed is small entrepreneurs should be induced to hasten the transition from existing levels to higher standards in terms of quality and design in order to become internationally competitive. There is need for constant adaptation and innovation in small scale sector for sustained competitiveness. Not only new techniques have to be internalized, effective management of the technique has also to be ensured. The SMEs as compared to SSI units would be better equipped in terms of their corporatisation and in turn would have smooth integration with broader markets in the era of globalization. Let us hope that the young entrepreneurs of the state avail the policy initiatives announced from time to time, put them into practice, bring the small scale sector of the state to the forefront and help the state economy to accelerate the rate of growth without doing much damage to the environment.

Before I end, let me emphasize on the fact that suitable policy measures no doubt enhance the competitive strength of the SSIs, but in order that a sustainable policy framework can be developed there is imperative need for getting proper feedback on the problem areas of small scale sector. The Ministry of SSI has provision for encouraging action oriented, policy oriented and problem oriented, research studies in small scale sector. Our young academicians may think in terms of research studies in the area and take pride in contributing to strengthening the small scale sector of the state economy in an effective manner.

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"ANNEXURE - I

Growth in Number, Production and Employment in Small Scale Sector

Year	Number (in Lakh)	Production (93-94 price) (Billion Rupees)	Employment (Million)
1973-74	4.16	342	3.97
1974-75	4.98	361	4.0
1975-76	5.46	425	4.59
1976-77	5.92	468	4.98
1977-78	6.70	528	5.40
1978-79	7.34	582	6.38
1979-80	8.05	664	6.70
1980-81	8.74	722	7.10
1981-82	9.62	783	7.50
1982-83	10.59	847	7.90
1983-84	11.55	935	8.42
1984-85	12.40	1046	9.00
1985-86	13.53	1181	9.60
1986-87	14.62	1336	10.14
1987 -88	15.83	1505	10.70
1988-89	17.12	1699	11.30
1989-90	18.23	1899	11.96
1990-91	19.48	2072	12.53
199.1-92	20.82	2136	12.93
1992-93	22.46	2256	13.41

1993-94	23.88	2416	13.94
1994-95	25.71	2660	14.66
1995-96	26.58	2964	15.26
1996-97	28.83	3299	16.00
1997-98	29.44	3577	16.72
1998-99	30.80	3853	17.16
1999-2000	32.12	4167	17.85
2000-01	33.70	4510	18.56
2001-02	34.64	4784	19.23
CARG			
73-74 to 80-81	10.3	11.1	9.1
80-81 to 90-91	8.4	10.6	6.0
90-91 to 00-01	6.1	8.2	4.2

Source: 51DO and DC (551)

ANNEXURE-II

Growth in Number, Production and Employment in Small Scale Sector*

Year	Number of SSI working (in Lakhs)	Production (93-94 price) (Rs. in Crore)	Employment (Lakh)
1990-91	67.87	68295	158.34
1991-92	70.63	79180	165.99
1992-93	73.51	93523	174.84
1993-94	76.49	98804	182.64
1 994-95	79.60	109116	191.40
1995-96	82.84	121649	197.93
1996-97	86.21	135380	205.86
1997 -98	89.71	147824	213.16
1998-99	93.36	159407	220.55
1999-2000	97.15	170709	229.10
2000-01	101.10	184428	239.09
2001-02	105.21	195613	249.09
2002-03	109.40	210636	260.13
2003-04	113.95	226581	271.36
CARG			
90-91 to 03-04	4.0	10.7	4.3

Source : *D.C. (SSI)*

Based on third census of SSIs.

ANNEXURE-III

labour and Capital Productivity in SSIs and LSIs (Factory Sector)

Year	Labour Productivity (Rs)		Relative Labour Productivity	Capital Productivity (Rs)		Relative Capital Productivity	Efficiency Index
	Small	Large		Small	Large		
1980-81	7813.75	20067.35	0.39	0.12	0.06	2.09	1.3
1981-82	7696.19	23089.94	0.33	0.12	0.06	1.88	1 .1
1982-83	7917.47	24547.77	0.32	0.13	0.07	1.81	1.1
1983-84	10384.47	27119.97	0.38	0.15	0.08	1.92	1.3
1984-85	10098.57	25761.32	0.39	0.14	0.08	1.83	1.2
1985-86	11118.33	29757.76	0.37	0.16	0.08	2.10	1.3
1986-87	11188.78	31554.72	0.35	0.17	0.08	2.04	1.2
1987 -88	11106.17	31293.96	0.35	0.17	0.09	1.97	1.2
1988-89	12282.27	35382.50	0.35	0.18	0.10	1.90	1.2
1989-90	13014.42	38694.49	0.34	0.22	0.11	1.96	1.3
1990-91	12720.63	41531.98	0.31	0.19	0.12	1.56	1.0
1991-92	14957.79	39516.72	0.38	0.23	0.11	2.06	1.4
1992-93	13016.28	46187.75	0.28	0.23	0.13	1.77	1.1
1993-94	17065.15	52539.16	0.32	'0.29	0.16	1.83	1.3
1994-95	15882.06	55819.47	0.28	0.28	0.17	1.63	1 .1
1995-96	15333.82	59048.01	0.26	0.26	0.20	1.27	0.9
1996-97	16389.74	59610.46	0.27	0.30	0.21	1.39	1.0
1997 -98	22013.74	70577.19	0.31	0.38	0.21	1.79	1.3

Source: SIDBI report on SSI, 2001.

Mangaraj Memorial Lecture

DIMENSIONS OF POVERTY AND PROSPECTS OF ECONOMIC DEVELOPMENT IN ORISSA

Prof. Baidyanath Misra

Orissa Economic Survey 2006-07 shows the incidence of poverty in Orissa since 1973-74 to 1999-00. According to the Survey, though the incidence of poverty in Orissa shows a declining trend since 1983-84, it is still the highest among all the states. As per BPL Survey 1999-00, the incidence of poverty in Orissa was 47.15 %: 48.01 per cent in rural areas and 42.83 per cent in urban areas. Table-1 shows not only the declining trend of poverty ratio in Orissa, since 1977-78 to 1999-00, but also the trend of the poverty ratio among the major states in India. While the all-India poverty ratio in the year 1999-00 was 26.10 %, it was the lowest in Punjab at 6.16%. Bihar, which figured just above Orissa in the list, had a poverty ratio of 42.60%. All these figures show the per centage of people below poverty line, which has been defined by the Planning Commission on the basis of consumption intake. The table further shows that the per centage of people below the poverty line in Orissa has come down from 70.07 in 1983-84, 55.58 in 1987-88,48.56% in 1993-94 and 47.15 in 1999-2000. The most noteworthy feature of the figures is that the decline in the incidence of poverty during the reform period has been negligible. In the period 1993-94 to 1999-00, it had reduced only marginally from 48.56% to 47.15 %. No further data are available in the Economic Survey regarding the change of poverty incidence in Orissa beyond 1999-00. The Panchayati Raj Department has prepared a district-wise information sheet on BPL Census for the year 1997. The Survey Report (Table-2) shows that districts like Koraput, Malkangiri and Boudh have more than 80 per cent BPL families. Koraput has the highest per centage of BPL families. The only district, which has less than 50 per cent, is Jharsuguda. This shows that there is great gap in the poverty ratio among districts. The Panchayati Raj Department has also released figures about BPL families

for the year 1992. A comparison between 1992 and 1997 shows that except two districts - Sonepur and Deogarh - all the districts have improved their position though in a varied manner.

Published data available from the 61st round (2004-05) of the National Sample Survey give a fair idea about the poverty and inequality in all states over the period 1983-2005, along with the overall change in India as a whole. But because of the difference in methodology between the 55th round (1999-2000) of the NSS and 61st round, there has been some controversy with regard to the findings of the above two survey reports. Till the 50th round (1993-94) NSS had a Uniform Reference Period (URP) of 30 days for question on food and non-food items. But the 55th round of NSS used a Mixed Reference Period (MRP). The reference periods for 1999-2000 were changed from the uniform 30-day recall to both seven days and 30 days for food and intoxicants and only 365 day questions were asked for items of clothing, footwear, education, institutional medical expenses and durable goods. Based on non-comparable data, the official estimates show a 10-per centage point decline between 1993-94 and 1999-2000. On the other hand, individual researchers have made several adjustments to make 1999-2000 data comparable with those of earlier rounds.

The NSS 61st round data on consumer expenditure for 2004-05 provide results for a uniform reference period, which can be compared with those of 1993-94. As such, there is scope to compute comparable poverty estimates for 2004-05. The 61st round also gives MRP results for 2004-05, which are also comparable with 1999-2000 data.

Himansu in his article "Recent Trends in Poverty and Inequality: Some Preliminary Results" and S. Mahendra Dev and C. Ravi in their article "Poverty and Inequality. All India and States, 1983-2005" have made a detailed analysis of poverty and inequality during both in pre- and post-reform periods. Even though our study refers to Orissa only, we make some general observations regarding the trends of poverty and inequality in India during pre-and post-reform period. Such general observations may give us some guidelines regarding the change that has taken place in Orissa during the period. We can also make some references to some other states for making some comparison with Orissa.

The findings of these authors on the basis of NSS data of the 61st round show the following.

1. Inspite of higher over-all growth over the period 1983-2005, the extent of decline in poverty in the post reform period (1993-2005) has not been higher than in the pre-reform period (1983-1993), more importantly, the bulk of this decline occurred in 1999-2005, with little or no reduction in poverty during 1993-2000, confirming the earlier consensus that the 1990s were indeed the lost decade for poverty reduction (Himansu). Himansu further states that although the analysis is not conclusive, the fall in the relative prices of food and regional pattern of changes in employment and wages appear to underline these trends. In fact employment elasticity during the reform period is found to be negligible. The 61st round of NSSO survey reveals a faster increase in employment during 1999-2000 to 2004-05 as compared to 1993-94 to 1999-2000 (Vide Economic Survey 2006-07 Govt of India, P-208)
2. It is also evident that inequality has increased significantly in the post reform period and seems to have slowed down the rate of poverty reduction (Mahendra and Ravi).
3. However changes in poverty in the two sub-periods of the post reform era, based on mixed reference period data from the NSS suggest the extent of decline in 1999-2005 seems to have been higher than in 1993-2000, which is surprising given that the latter years witnessed slower growth in agriculture. Mahendra and Ravi suggest that this needs to be further investigated.

However when we consider comparable estimates of poverty and inequality on the basis of URP official poverty line, we find that in case of India head count ratio of poverty line, poverty gap (PG) and squared poverty gap (SPG) have, both in rural and urban areas (all in per centages) have declined between 1993-1994 and 2004-2005. Tables 2 and 4 present all these aspects of poverty of 19 major states. These tables show that head count ratio has increased in Orissa in urban areas from 40.6 per cent to 43.7 per cent between 1993-1994 and 2004-2005 and in case of poverty gap and squared poverty gap there is increase both in rural and urban areas during the same period. The only other state where there is increase in poverty gap and squared poverty gap both in rural and urban areas is Chhatisgarh. We should not forget to mention here that Chhatisgarh is a new state and has not been able to stabilize its economy. It is unfortunate that Orissa not only partakes the

characteristics of this new state, but also shows an increase in headcount ratio of poverty during the above period. When we come to Gini ratio (again in per centages) during the above period, it is higher in the latter period in most of the states (higher in 14 states in rural areas and 18 States in urban areas) along with an increase at the all-India level both in rural and urban areas. This means higher economic development has not reduced inequality, rather increased it. At the all India level it has increased from 28.6 per cent to 30.5 per cent in rural areas and 34.4 per cent to 37.6 per cent in urban areas. And in Orissa it has increased from 24.6 per cent to 28.5 per cent in rural areas and from 30.7 per cent to 35.4 per cent in urban areas.

The Planning Commission has recently released the poverty estimates for 2004-2005 based on the 61st round Consumer Expenditure Survey (CES) of the NSS. On the basis of this, the incidence poverty (as measured by the head count ratio) in all India is only 21.8 per cent in 2004-2005. If this were so, then the poverty ratio in 2004-2005 when compared to the level of 36 per cent in 1993-1994 shows a decline of over 14 per centage points. But if we compare, the per centage and number of poor in 2004-2005 estimated from URP consumption distribution of NSS 61st round of consumer expenditure data (which) are comparable with poverty estimates of 1993-1994, we find that the poverty ratio in 2004-2005 was 28.7 per cent in rural areas and 25.9 per cent in urban areas and 27.5 per cent for the country as a whole. That is, the decline in comparable estimates of poverty between 1993-1994 and 2004-2005 has been less than 9 per centage points. This is noteworthy because the figure 27.5 per cent for 2004-2005 is higher than the poverty in 1999-2000 which was 26 per cent.

If we take head count ratio on the basis of MRP, we find significant improvement in poverty reduction in many states. At all India level poverty ratio has come down from 26.62 per cent in 1999-2000 to 21.52 per cent in 2004-2005 (rural areas from 27.5 per cent to 21.9 per cent and urban areas from 24.33 per cent to 20.68 per cent during the same period). There has been also some change in Orissa from 47.89 per cent to 40.50 per cent during 1999-2000 to 2004-2005 (rural areas from 48.73 per cent to 40.7 per cent and urban areas from 43.06 per cent to 39.5 per cent during the same period). However, poverty ratio is still highest in Orissa; the next poorest state is Bihar where it has come down from 42.99 per cent to 32.94 per cent. Except Haryana, Rajasthan

and Tamilnadu where there has been slight deterioration in poverty level, all the other major states have recorded some improvement. Surprisingly the improvement in Assam has become highest; poverty ratio has come down from 36.6 per cent (1999-2000) to 14.64 per cent (2004-2005).

Since NSS had a uniform reference period till the 50th round (1993-94), we have indicated head count ratio, poverty gap, squared poverty gap (intensity of poverty) and Gini Ratio (level of inequality) of Orissa in tables 3 & 4, up to 2004-2005 for which data are available on the basis 61st round of NSS study. We have seen that there has been no significant improvement in head count ratio and in case of PG, SPG and Gini Ratio; on the other hand there has been some deterioration.

The entire analysis of poverty dimension in India since 1973-74 has been done on the basis of 28th round survey of NSS. But the 28th round survey period covered only 9 months, from October 1973 to June 1974. More importantly the number of households surveyed for consumer expenditure enquiry in the round was much less (less than one fourth for rural India and less than one-sixth for urban India). If the base year changes the poverty ratio will necessarily change. Head Count Ratio (HCR) in any year depends on three factors: (a) the choice of the base year, (b) per capita calorie norm to be considered for defining the poverty line and (c) the price deflator to be used for updating the base year poverty line.

The Task force of the Planning Commission in 1973-74 defined the poverty line as per the per capita total consumer expenditure level on the basis of 2400 and 2100-calory norms for rural & urban areas respectively according to all India size distribution of monthly per capita consumer expenditure for 1973-74 taking into account price deflator.

All India poverty lines for 1973-74 were estimated to be Rs.49.09 and Rs.56.64 per capita per month at 1973-74 prices for rural and urban areas respectively. If the same procedure is followed the all-India poverty line in the year 1999-2000 comes to Rs 327.56 for rural areas and Rs 454.11 for urban areas. And the corresponding HCR for 1999-2000 comes to 27.09 per cent and 23.62 per cent for the rural and urban areas respectively.

G. C. Manna, on the other hand has calculated poverty line by taking 1972-73 as the base year with average calories norms of 2290 per rural and 2250 per urban areas (by taking different types of work,

age and sex distribution along with ICMR estimates). His calculation shows that poverty lines in rural and urban areas in 1999-2000 come to Rs.334.23 for rural areas and 614.46 for urban areas at current prices. There is also change in HCR, which comes to 28.76 per cent for rural, and 44.18 per cent in urban areas. If we don't change the calorie norm i.e., taking 2400 calories for rural areas and 2100 calories for urban areas, we also find change in poverty line in 1999-2000 on 30 day recall period at Rs.371 for rural areas (not Rs.327.56) and Rs 534.20 for urban areas (not Rs.454.11). All this shows that if the base year changes along with change or without change in calories and taking into account the prices deflator, there are changes in poverty lines and HCRS. Manna has also shown statewise average daily per capita calorie requirements and the relative standard errors (RSE) of estimates (per cent) for both 1993-94 and 1999-2000 (vide statements A-2, A-3 and A-4 of G. C. Manna's Paper)

K. Sundarm in his paper 'Employment and Poverty in India-2000-2005' has made a detailed analysis of the changes in the size and character of poverty in India in the quinquennium of the 21st Century. His findings are given below:

(1) During the period 2000-2005, there was a sharp acceleration in workforce growth especially of females with a little over 57 million added to the total workforce. Of this incremental workforce 49 million were self employed and 10.7 million were regular wage salary workers (RWS), dispelling any notion of 'jobless growth'. The number of casual labourer, however declined by a little over 2.7 million.

(2) In terms of industrial distribution, a spectacular 4.8 per cent per annum growth in manufacturing employment and a continued decline in the share of agriculture - to a little over 56 per cent is noteworthy. Despite some occupational diversification, India still remains a land of farmers, fishermen, hunters and loggers with marginal gains in the share of production process workers and of professional and technical workers, and administrators, executive and managerial workers.

(3) The adverse side of the acceleration in workforce growth is the slowdown in the rate of growth of labour productivity across most sectors and in the economy as a whole. Not surprisingly,

we also have a slowdown in the rate of growth of real wages of casual labourer in rural India and an actual decline in real wage in urban India.

(4) His analysis of poverty shows that on a comparable basis reduction in poverty is substantially smaller than indicated by Himanshu and Mahendra Dev and Ravi. C, relative to the pace of marginal acceleration (or depreciation, depending on the choice of the poverty lines) in rural India and a clear slow down in urban India in the pace of poverty reduction between 2000 and 2005.

(5) Finally reflecting largely the net result of a decline in the number of casual labourers in BPL households (5.5 Million) and a rise in the number of self employed from (6.2 million), the number of working poor rose by a little over 1 million between 2000 and 2005 with their number totaling a shade under 104.5 million as on January 1, 2005.

He does not discuss the poverty dimension of different states. His analysis, however, shows that though there is some change in size and character of poverty, there is not much improvement in the poverty level of poorer states like Orissa.

Utsa Patnaik in her paper on 'Neoliberalisation and Rural Poverty in India' points out that, the question of nutrition has been rendered irrelevant in the official method of poverty calculation. The official rural poverty line of Rs. 328 for 1999-2000 yielded only 1890 calories and not 2400 calories. A total of 2400 calories could be accessed only at Rs 565 and as such as high as 74.5 per cent of persons spent less than this amount– the correct estimate of poverty for 1999-2000 was therefore 74.5 per cent in rural areas. Similarly in case of urban areas, the official poverty line of Rs 454 allowed only 1875 calories and to access 2100 calories, the urban consumer needed to spend Rs.625 and as high as 45 per cent of persons were below the poverty level and not 23.4%.

When we come to poverty line in case of 2004-05, on the basis of nutrition data which have been recently released, the direct estimate of the poverty line required to access 2400 calories comes to Rs 795, an all time record high and 87 per cent of the population is below this level. The official estimate varies greatly from the findings of Utsa Patnaik on the basis of nutrition level of 2400 calories for the year

2004-05. According to the official estimate, the per centage of persons below poverty line (official indirect estimates) comes to 28.3 and an amount of Rs.356 is the estimate to access 2400 calories, which really provides 1820 calories. Utsa Patnaik also provides direct estimates of poverty of different states on the basis of nutrition level of 2400 calories. In Orissa according to indirect official estimates, the official poverty line in 2004-05 is Rs. 325.79 and the poverty ratio is 46.8 per cent. But at this level the calorie intake comes to 2010 only and not 2400. On the basis of direct estimates, only 17.5 per cent of people can be able to consume 2400 calories. This means according to the official poverty line of Rs 325.79, the poverty ratio in Orissa comes to 82.5 per cent in 2004-05.

All these estimates show that we cannot be definite with regard to poverty ratio in India or any state in India. Even the World Bank's World Development Report, 2006 presents a figure of 30.2 per cent as persons below the poverty line for the year 2004-05. All that we can say that there is colossal poverty in India and the dimension of poverty in Orissa is still worse. These findings do not give us any hope that we can make any significant change in the poverty ratio of Orissa unless there is a substantial change in the direction and content of the economy. The following general observations are suggested to some how approach the Millennium Development goals by 2015.

1) Agricultural development is a crucial factor in economic and social change in Orissa. As the Economic Survey of Orissa (2006-2007) observes, development of agriculture in Orissa has lagged behind due to several constraints such as traditional methods of cultivation, inadequate capital formation and low investment, inadequate irrigation facilities and uneconomic size of holdings. Further, the domestic sector of the state's economy has become more often than not a helpless victim of natural calamities like flood, drought and cyclone. What is therefore necessary is to accelerate the process of agricultural development by increasing both production and productivity, improving cropping pattern and agricultural practices, evolving new varieties of seeds, expanding irrigation facilities, extending the supply of institutional credit and so on. All these require more investment on agriculture along with proper use of inputs.

For example, if we increase the use of fertilizer in an unbalanced manner, we cannot increase the productivity of fertilizers. The implication is, not only we have to increase the use of fertilizer, but maintain its proper balance for its effective use. A change in technology is also necessary. It has been observed that in many cases due to lack of adequate knowledge and research constraint, additional application of inputs such as irrigation and fertilizers has not increased total factors productivity. It is said that there is almost a technological fatigue which has not increased productivity. On the other and it has led to erosion of resource base of agriculture. Since in the Eleventh Plan, the Planning Commission has made a number of concrete recommendations for improving agricultural growth for an 'inclusive growth', we need not elaborate these recommendations for attaining Millennium Development Goals in Orissa. However, we can only mention that Rural Development Expenditure (RDE) should aim at increasing the income of farmers by increasing the investment in agriculture, improving infrastructure in rural areas for facilitating successful operational mechanism of village and small scale industries, accelerating irrigation facility with greater emphasis on water-harvesting structures and controlling floods, providing a number of special area programmes to assist the small and marginal farmers along with poor artisans and persons below the poverty lines. In addition steps should be taken to complete the land reform measures, which were initiated in the fifties and early part of sixties and abandoned when the new technology of HYV developed in the later part of sixties. In China, for example, much of the extreme poverty was reduced in the first -half of the 1980s mainly as a result of (a) the spurt in agricultural growth following decollectivisation (agricultural output grew at 7.1 per cent per year on an average during 1979-84 compared to 2.7 per cent during 1970-78) (b) land reform, which by an egalitarian redistribution, subject only to differences in regional average and demographic size, provided a floor to rural income and (c) readjustment of farm procurement prices (Pranab Bardhan). This shows agricultural development should play a major role in reducing poverty.

2) Another factor, which is important and often neglected, is the pressure of population on agriculture. Nearly 85 per cent of its population lives in rural areas of Orissa and most of them are dependent on agriculture and allied activities for their livelihood. Inspite of such heavy dependence on agriculture and its allied sectors, they contribute hardly 40% to 42% to NSDP in different years. And what is more, according to Agricultural Census 2000-2001 conducted by the Board of Revenue, there were 40.67 lakh operational holdings in Orissa with 50.81 lakh hectares of area. Small and marginal holdings accounted for 83.8 per cent with 53.12 per cent of total area. Remaining 16.2 per cent of holdings belonged to semi-medium, medium and large categories with 46.88 per cent of total area. Average size of operational holdings, which was 1.30 hectares in 1995-1996 Census, declined to 1.25 hectares in 2000-2001 Census. Land resources remaining almost the same, the per capita availability of land in Orissa has considerably gone down from 0.39 hectare in the year 1950-1951 to 0.14 hectare in 2005-2006 due to increase in population. Heavy pressure on land has resulted in huge unemployment and underemployment in rural areas. It is therefore essential that along with increase in productivity of land, a large number of non- farm occupations should be created in rural areas to reduce the pressure on land and improve the economic status of rural people by increasing their income. Even at present the productivity of nonfarm sector in rural areas is greater than that of farm sector. Such non-farm occupations will also provide scope for application of new technology. It may also be mentioned here that agriculture and industry should not be competitive but complementary to sustain rural population with greater scope for employment and livelihood.

3) It is often argued that adequate price support should be given to farmers which will place the agricultural sector on a sound and safe footing. We will rather argue that instead of higher prices of food grains, development of sustainable technology, improvement of infrastructure and increase of human skill will provide better scope for agricultural development and quality of life of farmers. For the last several years there have been large increases in the minimum support price (MSP) of rice and wheat

due to the pressure of big farmers as a result of which there was a large gap between the cost of production and the MSP. One of the important impacts of this development was the regional segmentation of the market; for example, prices of food grains in the primary grain markets remained below MSP in some northern states that substantially reduced private trade from the grain markets and excessive financial cost to the FCI for procurement and storage of food grains. Reduction of private trade in wheat and rice in the northern states of Punjab and Haryana also possibly led to crowding out of private investment in agricultural marketing channels. Market prices were often lower than the MSPs and therefore, there was unabated build up of food grain stocks with the FCI. At one point of time (June 2002) the stocks at 64.7 million tonnes were almost three times the buffer requirements that resulted in extremely high carrying costs and bloated food subsidy (Economic Survey 2005-2006, Govt of India p 95-96).

In spite of higher MSP, the pressure on the part of large farmers' organizations is always there for higher support price and that, with the support of many political parties. But the economic analysis shows that the supply response of higher price in Indian agriculture is much less important than the improvement in technology, infrastructure and human capital. Dharm Narain (1976) who has made pioneering work on the supply response of Indian agriculture has pointed out "an over simplistic and therefore, excessive preoccupation with price can do more harm than good by distracting attention from the harder but more important tasks which belong in the non-price world of achieving technological breakthroughs and releasing such real constraints as stand in the way of becoming a reality in the farmers' fields". Raj Krishna (1982) who made a survey of agricultural supply response in several developing countries found that the elasticity of output with respect to major technological shifters such as irrigation was 1.5 to 5.5 times the price elasticity. He therefore, suggested to give more attention to the development of technology (which can increase productivity), infrastructure particularly in rural areas (which will facilitate the improvement of agro-based industries thus reducing pressure on agriculture) and human capital (which will enable the farmers to improve their skill for operational efficiency). There is also great need to evolve

new biotechnologies to save on chemical inputs and increase productivity in irrigated and dry land areas without associated ecological harm. The new research inputs should aim at achieving agricultural revolution in five areas to sustain and expand the gains already achieved and improve the ecological balance which will prevent degradation of land due to depletion of soil fertility and moisture. These five areas are productivity, quality, income and employment, small farm management and enlarging the food basket along with nutritional dimension (Swaminathan). All this implies that adequate funds should be provided to improve research to evolve new technologies, create favourable institutional set up which can carry such research programmes with success and design proper incentives for the absorption of new technology for the development and diffusion of adequate new technology (Rao), not only in irrigated areas but also in dryland areas.

In conclusion, we can say that the prospects of agriculture is bright, provided we divert some farmers from agriculture to other agro-based rural industries by improving infrastructure, strengthening the supply side factors such as irrigation, watershed development, research and extension and credit and improving the efficiency of assets created to increase agricultural production. Agriculture is a business now. Business principles should be applied in agriculture to improve the efficiency of assets created or projected to be created so as to strengthen income opportunities of all those who have to work in agriculture to sustain their livelihood and meet the requirements of all others who are working in different fields of activities. Take the case of efficiency. We speak of business principles because many of the assets created in Orissa do not provide adequate benefit. It is estimated that water use efficiency under the existing irrigation projects in Orissa comes to less than 40 per cent. As against this, in the advanced systems of the west, as much as 60-70 per cent of the water diverted in large surface system is available for plant use. Similarly a number of irrigation projects started with great gusto to be completed within a period of 5 to 6 years linger on for 20 to 25 years with an escalation of cost of 10 to 12 times. In the 10th Plan, a sum of roughly Rs.10,000 crore was spent on irrigation for India, but we succeeded in bringing only half the targeted 16 million hectares under irrigation. In the last NDC meeting, the Prime Minister announced to set apart, a sum of Rs.25,000 crore for agricultural development. Clearly it is not only the quantum but also the quality of

spending that determines outcomes. Sheer wastes of resources are numerous in Orissa and should be avoided to improve agricultural productivity in the state. As Pandit Jawaharlal Nehru, the great architect of India's development said, "all other activities can wait, but not the development of agriculture". Therefore agricultural development should be given first priority in Orissa to sustain and improve the livelihood of vast multitude of poor people living in rural areas.

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TABLE -1

Sl. No.	State	Per centage of Population below poverty line 1990-00		
		Rural	Urban	Combined
1	Andhra Pradesh	11.1	26.6	15.8
2	Arunachal Pradesh	40.0	7.5	33.5
3	Assam	40.0	7.5	36.1
4	Bihar	44.3	32.9	42.6
5	Chhatisgarh			
6	Goa	1.4	7.5	4.4
7	Guirat	13.2	15.6	14.1
8	Haryana	8.3	10.0	8.7
9	Himachal Pradesh	7.9	4.6	7.6
10	Jammu and Kasmir	4.0	2.0	3.5
11	Jharkhand			
12	Karnatak	17.4	25.3	20.0
13	Kerala	9.4	20.3	12.7
14	Madhya Pradesh	37.1	38.4	37.4
15	Maharastra	23.7	26.8	25.0
16	Manipur	40.0	7.5	28.5
17	Meghalaya	40.0	7.5	33.9
18	Mizoram	40.0	7.5	19.5
19	Nagaland	40.0	7.5	32.7
20	Orissa	48.0	42.8	47.2
21	Punjab	6.4	5.8	6.2
22	Rajasthan	13.7	19.9	15.3
23	Sikkim	40.0	7.5	36.6
24	Tamil Nadu	20.6	22.1	21.1
25	Tripura	40.0	7.5	34.4
26	Uttar Pradesh	31.2	30:9	31.2
27	Uttaranchal			
28	West Bengal	31.9	14.9	27.0
	INDIA	**27.1**	**23.6**	**26.1**

Source : Economic Survey 2006-07, Government of Orissa.

TABLE - 2
DISTRICT-WISE INFORMATION ON BPL CENSUS

Sl. No.	Name of the District	1992 Survey			1997 Survey			Variation in%
		Total Rural Families	No. of BPL Families	% of BPL Families	Total Rural Families	No. of BPL Families	% of BPL Families	
1	ANGUL	183237	126343	68.95	203152	120581	59.36	-9.60
2	BALANGIR	238968	181195	75.82	329700	201310	61.06	-14.77
3	BALASORE	314008	264088	84.10	349446	257606	73.72	-10.38
4	BARGARH	210971	147027	69.69	291901	176241	60.38	-9.31
5	BHADRAK	199323	179130	89.87	205185	136849	66.70	-23.17
6	BOUDH	66776	54145	81.08	89617	71872	80.20	-0.89
7	CUTTACK	253293	187783	74.14	335998	176002	52.38	-21.75
8	DEBAGARH	48237	33833	70.14	55298	43571	78.79	8.65
9	DHENKANAL	163168	137670	84.37	203032	127159	62.63	-21.74
10	GAJAPATI	87454	82478	94.31	112029	68763	61.38	-32.93
11	GANJAM	452732	340435	75.20	548308	301585	55.00	-20.19
12	JAGATSINGHPUR	161946	108827	67.20	172300	90895	52.75	-14.45
13	JAJPUR	252138	179838	71.33	280769	169595	60.40	-10.92
14	JHARSUGUDA	58439	34158	58.45	68164	33415	49.02	-9.43
15	KALAHANDI	241294	206961	85.77	307835	193054	62.71	-23.06
16	KENDRAPARA	188768	116990	61.98	219436	131424	59.89	-2.08
17	KEONJHAR	211611	175533	82.95	286923	220820	76.96	-5.99
18	KHURDA	184484	142850	77.43	226800	134192	59.17	-18.26
19	KORAPUT	188169	162931	86.59	264707	221846	83.81	-2.78
20	MALKANGIRI	79865	67737	84.81	108870	89138	81.88	-2.94
21	MAYURBHANJ	363869	315084	86.59	482176	374867	77.74	-8.85
22	NABARANGPUR	151834	137504	90.56	215429	158684	73.66	-16.90
23	NAWAPARA	94039	78652	83.64	127022	99465	78.31	-5.33
24	NAYAGARH	152455	132219	86.73	183437	124576	67.91	-18.81
25	PHULBANI	113741	100802	88.62	145335	113970	78.42	-10.21
26	PURI	207887	155279	74.69	236721	163639	69.13	-5.57
27	RAYAGADA	141862	122061	86.04	188499	135785	72.03	-14.01
28	SAMBALPUR	137286	99155	72.23	150799	90141	59.78	-12.45
29	SONEPUR	91909	57250	62.29	110098	80396	73.02	10.73
30	SUNDERGARH	225696	167622	74.27	285141	185969	65.22	-9.05
	Grand Total	**5465459**	**4295580**	**78.60**	**6784127**	**4493410**	**66.23**	**-12.36**

Source: *Panchayat Department, Govt. of orissa*

TABLE - 3

COMPARABLE ESTIMATES OF POVERTY AND INEQUALITY
(URP, Official Poverty Lines)

Rural	Headcount Ratio %				Poverty Gap %			
	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05.
Andhra Pradesh	26.8	21.0	15.9	10.8	5.86	4.35	2.9	2.0
Assam	44.6	39.4	45.2	21.7	8.75	7.45	8.3	3.5
Jharkhand	65.5	52.8	62.3	42.9	22.00	13.56	16.2	8.9
Bihar	64.7	54.2	56.6	42.2	19.54	12.74	14.2	8.3
Gujarat	28.9	28.3	22.2	19.4	5.64	5.44	4.1	3.4
Haryana	21.9	15.3	28.3	13.6	4.28	3.62	5.6	2.2
Himachal Pradesh	17.0	16.7	30.4	10.9	3.58	2.63	5.6	1.5
Karnataka	36.3	32.6	30.1	20.0	9.73	7.88	6.3	2.7
Kerala	39.6	29.3	25.4	13.2	9.98	6.30	5.6	2.8
Chhatisgarh	50.6	46.7	44.4	42.0	12.49	10.38	8.6	9.4
Madhya Pradesh	49.0	40.1	39.2	35.8	13.95	10.64	9.8	7.8
Maharastra	45.9	40.9	37.9	30.0	11.95	9.56	9.3	6.4
Orissa	68.5	58.7	49.8	46.9	22.72	16.30	12.0	12.1
Punjab	14.3	12.8	11.7	10.0	3.03	1.97	1.9	1.3
Rajasthan	35.0	33.3	26.4	19.0	9.65	8.64	5.2	2.9
Tamil Nadu	54.8	46.3	32.9	22.7	17.39	12.65	7.3	3.7
Uttaranchal	25.2	13.2	24.8	14.9	4.00	1.99	4.4	1.9
Uttar Pradesh	47.8	43.3	43.1	33.9	12.70	10.25	10.6	6.7
West BenQal	63.6	48.8	41.2	28.5	21.06	11.58	8.3	5.4
All India	46.5	39.0	37.2	28.7	12.36	9.29	8.5	5.8
Rural	**Squared Poverty Gap %**				**Gini %**			
	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05
Andhra Pradesh	2.00	1.41	0.87	0.65	29.7	30.9	29.0	29.4
Assam	2.63	2.04	2.21	0.90	20.0	23.0	17.9	19.9
Jharkhand	9.80	5.03	5.59	2.55	27.2	26.6	23.4	22.7

	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05
Bihar	7.86	4.32	4.90	2.30	25.9	25.2	22.2	20.7
Gujarat	1.69	1.59	1.16	0.91	26.8	26.1	24.0	27.3
Haryana	1.37	1.30	1.75	0.61	28.5	29.2	31.4	34.0
Himachal Pradesh	1.16	0.71	1.62	0.35	.	27.1	28.4	31.1
Karnataka	3.69	2.80	2.01	0.63	30.8	29.7	27.0	26.5
Kerala	3.62	2.05	1.85	0.98	32.0	32.1	30.1	38.3
Chhatisgarh	4.47	3.36	2.47	3.43	24.4	24.5	21.7	29.8
Madhya Pradesh	5.54	3.97	3.58	2.31	31.5	30.6	30.0	26.8
Maharastra	4.30	3.21	3.35	1.99	29.1	31.2	30.7	31.2
Orissa	10.17	6.24	4.07	4.24	27.0	26.9	24.6	28.5
Punjab	1.06	0.51	0.48	0.26	29.2	29.7	28.1	.29.5
Rajasthan	3.81	3.40	1.56	0.72	34.7	31.5	26.5	25.1
Tamil Nadu	7.52	4.80	2.50	0.96	36.7	33.0	31.2	32.2
Uttaranchal	1.04	0.46	1.08	0.42	29.2	28.3	24.4	28.5
Uttar Pradesh	4.70	3.40	3.64	1.93	28.9	28.5	28.3	29.0
West BenQal	9.46	3.99	2.45	1.42	30.0	25.8	25.4	27.4
All India	**4.87**	**3.23**	**2.84**	**.1.76**	**30.4**	**29.9**	**28.6**	**30.5**

Source : 2004-05 estimates are calculated from grouped data from NSSO Report 508. Estimates for 1983,.1987-88 and 1993-94 are calculated from the unit level data respectively.

TABLE - 4

COMPARABLE ESTIMATES OF POVERTY AND INEQUALITY
(URP, Official Poverty Lines)

URBAN	Headcount Ratio %				Poverty Gap %			
	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05.
Andhra Pradesh	41.2	41.1	38.8	27.1	10.9	10.6	9.3	6.1
Assam	25.9	11.3	7.9	3.7	5.6	1.5	0.9	0.5
Jharkhand	40.5	34.6	26.5	20.7	10.9	7.8	5.2	4.7
Bihar	61.6	63.8	40.7	38.1	18.5	16.6	9.7	9.3
Guiarat	41.9	38.5	28.3	14.2	9.7	8.2	6.2	2.5
Harvana	26.4	18.4	16.5	15.6	5.8	3.6	3.0	3.2
Himachal Pradesh	11.0	7.2	9.3	5.0	2.8	0.7	1.2	1.0
Karnataka	43.6	49.2	39.9	33.3	13.3	14.1	11.4	8.9
Kerala	48.0	38.7	24.3	20.6	14.7	10.0	5.5	4.7
Chhatisgarh	50.7	36.0	44.2	40.7	14.5	9.8	11.5	12.9
Madhya Pradesh	56.1	50.0	49.0	42.3	16.1	14.5	13.9	12.4
Maharastra	41.1	40.5	35.0	32.8	12.1	12.4	10.2	9.2
Orissa	54.0	42.6	40.6	43.7	16.7	11.1	11.4	14.1
Punjab	22.9	13.7	10.9	5.0	5.9	2.3	1.7	0.6
Rajasthan	41.2	37.9	31.0	28.5	11.5	9.6	7.0	6.2
Tamil Nadu	51.9	40.2	39.9	24.1	15.4	11.5	10.2	5.3
Uttaranchal	22.4	20.4	12.7	17.0	5.9	4.2	3.2	3.0
Uttar Pradesh	52.7	46.4	36.1	30.7	15.1	12.7	9.3	7.2
West BenQal	33.5	33.7	22.9	15.4	8.5	7.4	4.5	2.6
All India	43.6	38.7	32.6	25.9	11.4	10.2	8.0	6.2

URBAN	Squared Poverty Gap %				Gini %			
	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05
Andhra Pradesh	4.1	3.9	3.2	1.9	33.2	36.1	32.3	37.6
Assam	1.7	0.3	0.2	0.1	26.1	31.0	29.0	32.1
Jharkhand	4.2	2.6	1.6	1.5	30.9	32.1	32.5	35.5

	1983	1987-88	1993-94	2004-05	1983	1987-88	1993-94	2004-05
Bihar	7.1	5.9	3.4	3.0	28.5	26.6	28.2	33.3
Guiarat	3.6	2.6	2.0	0.7	28.5	27.8	29.1	31.0
Harvana	1.9	1.1	0.9	1.0	34.8	28.7	28.4	36.5
Himachal Pradesh	1.1	0.1	0.3	0.3	35.8	29.2	46.2	32.6
Karnataka	5.5	5.7	4.4	3.1	34.2	34.0	31.9	36.8
Kerala	6.2	3.9	1.9	1.6	38.9	36.9	34.3	41.0
Chhatisgarh	5.6	3.6	4.1	5.4	32.2	32.1	30.6	44.0
Madhya Pradesh	6.2	5.6	5.3	4.8	29.8	33.3	33.6	39.7
Maharastra	4.9	5.2	4.2	3.5	34.6	34.8	35.7	37.8
Orissa	7.1	4.2	4.3	5.8	29.0	31.0	30.7	35.4
Punjab	2.3	0.6	0.4	0.1	33.9	28.8	28.1	40.3
Rajasthan	4.7	3.4	2.2	1.9	33.9	34.6	29.3	37.2
Tamil Nadu	6.3	4.6	3.9	1.6	35.1	35.8	34.8	36.1
Uttaranchal	2.0	1.2	0.9	0.7	30.5	35.1	27.5	32.9
Uttar Pradesh	5.9	4.7	3.4	2.3	31.5	33.5	32.6	36.9
West Bengal	3.2	2.4	1.4	0.6	33.5	34.6	33.9	38.3
All India	**4.4**	**3.8**	**2.9**	**2.0**	**33.9**	**35.0**	**34.4**	**37.6**

Source : 2004-05 estimates are calculated from grouped data from NSSO Report 508. Estimates for 1983, 1987-88 and 1993-94 are calculated from the unit level data respectively.

Post-Reform Crisis in Indian Agriculture

Post-Reform Crisis
in Indian Agriculture

Agrarian Scenario in Post-reform India: A Story of Distress, Despair and Death

Srijit Mishra

Indira Gandhi Institute of Development Research (IGIDR)
General Arun Kumar Vaidya Marg
Goregaon (E), Mumbai- 400065, INDIA
Email (corresponding author):
srijit@igidr.ac.in

ABSTRACT

Indian agriculture today is under a large crisis. An average farmer household's returns from cultivation would be around one thousand rupees per month. The incomes are inadequate and the farmer is not in a position to address the multitude of risks: weather, credit, market and technology among others. Social responsibility of education, healthcare and marriage instead of being normal activities add to the burden. All these would even put the semi-medium farmer under a state of transient poverty. The state of the vast majority of small and marginal farmers and agricultural labourers is worse off. An extreme form of response to this crisis is the increasing incidence of farmers' suicides. In such situations, employment programmes can provide some succour to the agricultural labourers and also perhaps to the marginal and small farmers. The least that one can expect from such programmes is rent-

[1] This has been prepared as a keynote paper on the theme "Post-reform Crisis in Indian Agriculture" for presentation at the 39th Annual Conference of the Orissa Economic Association, January 13-14, 2007, U.N.S. Mahavidyalaya, Mugpal, Jajpur, Orissa. It is also meant to be a background paper for the ongoing book project on 'Agrarian Crisis in India' and the concurrent exercise on 'Agricultural Indebtedness' undertaken at IGIDR. The author thanks Manoj Panda, R. Radhakrishna, D. Narasimha Reddy and V. M. Rao for comments and discussion on related issues, EPWRF for providing some raw data on value of output in agriculture and C. S. Mishra for providing provisional data on suicides for 2004. Usual disclaimers apply.

seeking. Some recent evidences indicate that one can develop institutions to address this. It is this that gives a glimmer of hope in the larger story of distress, despair and death.

Incidentally, this paper provides some estimates from National Sample Survey (NSS) region-wise information on returns to cultivation and on some aspects of farmers' indebtedness based on the 33rd schedule, 59th round survey of 2003. It provides suicide mortality rate for farmers, non-farmers and age-adjusted population across states of India from 1995-2004.

Key words: Agrarian crisis, agricultural indebtedness, farmers' suicides, employment programmes, value of output in agriculture

JEL Code(s): 131, O13, O53

1. Introduction

In recent years, the growth of the Indian economy at about eight per cent per annum is considered as a success of the reform process initiated in the 1990s. This is analogously called the rise of the Indian elephant which, of course, is different from the Chinese dragon. Is this poetic phrase justified; or, is it a satire? The grace and beauty in the elephant's stride seems to be missing - "India shines, but Bharat falters." The impressive growth in recent years is largely a story of the urban-based service sector and to a lesser extent for industry whereas agriculture is lagging behind. Today, agriculture accounts for less than one-fourth of the gross domestic produce but employs nearly three-fifths of the total work force. Within agriculture, the incremental value addition in output indicates a shift away from traditional crops to high value crops like fruits & vegetables that hardly have any presence under the gross cropped area. The growth of the cereals, propelled largely by rice and wheat through the green revolution, is also not very encouraging in the recent past.

Overall, income from cultivation is inadequate. It becomes difficult for the farmer to plan for all possible risks: vagaries of nature (primarily, inadequate or excessive water), market related uncertainties such as increasing input costs and output price shocks, unavailability of credit from institutional sources or excessive reliance on informal sources

with a greater interest burden and new technology among others. With the decline in extension service he has to rely on the input dealer leading to supplier-induced-demand. This has adverse implications on the livelihoods of the cultivators, most of whom are marginal and small farmers, as well as for agricultural labourers. This is indicative of a larger agrarian crisis. Response to the crisis would be different among different sub-groups and vary across different regions. One of the extreme forms of reaction is reflected through the increasing incidence of farmers' suicides. If the state of farmers is critical then that of the agricultural labourers would be worse off.

In this paper we further elaborate about the changing agrarian scenario, increasing incidence of farmers' suicides and also on some public policy interventions with regard to employment programmes in sections 2-4 respectively. Concluding remarks are in section 5.

2. Changes in Agrarian Conditions[2]

Agriculture's contribution to the gross domestic produce in India has reduced from 56 per cent in 1950-51 to 23 per cent in 2005-06 whereas as per the 2001 Census 58 per cent of the total work force and 73 per cent of the rural workers are still dependent on agriculture. This also indicates that rural non-farm employment opportunities are limited. Between 1960-61 and 2002-03, the number of agricultural operational holdings in rural India during Kharif nearly doubled from 53 million to 102 million. Composition across size-class after including landless indicates that large (above 10 hectares), medium (4-10 hectares) and semi-medium (2-4 hectares) categories have been declining from the 1960s, small (1-2 hectares) size-class started declining from the 1970s with absolute numbers declining in the 1990s, marginal (0.002-1 hectare) size-class declining in the 1990s with absolute numbers increasing from 45 million in 1990-91 to 48 million in 2002-03 and nil (0-0.002 hectares) category which declined from 27 per cent in 1970-71 to 22 per cent in 1990-91 has increased to 32 per cent in 2002-03 (National Sample Survey Organisation (NSSO) 2006). After excluding

[2] For some recent discussions on the agrarian crisis see Rao and Gopalappa (2004), Mohanty (2005), Reddy (2006), Reddy and Mishra (2006), Vaidyanathan (2006) and Vyas (2004) among others.

Jammu & Kashmir and Manipur the Census figures indicate that from 1991 to 2001 the total number of cultivators remained around 125 million whereas that of agricultural labourers increased from 86 million to 106 million. In short, the dependence on agriculture is increasingly among the ranks of agricultural labourers and marginal farmers.

In the 1990s (1990-91 to 1999-2000) the index of farm income remained around 100 whereas consumer price index of agricultural labourers more than doubled from 100 to 219 and this has led to widening disparities between agricultural and nonagricultural income (Reddy 2006). The index of agricultural production increased from 100 at triennium ending 1981-82 to 170 in the triennium ending 2003-04 (Reserve Bank of India (RBI) 2005). Comparing trends in growth rate in production, area and yield in the 1980s (TE 1981-82 to TE 1992-93) and 1990s (TE 1993-94 to TE 2004-05) for major crop groups one observes that the growth rates have been significantly lower in production and this is largely because of the lower growth rates in yield for most of the crop groups (Table 1).

TABLE 1

Growth Rate of Production, Area and Yield (Per cent per Annum): Comparing 1980s and 1990s

Crops	Production		Area		Yield	
	1980s	1990s	1980s	1990s	1980s	1990s
Total Foodgrains	3.0 *	1.0 * #	-0.3 *	-0.3 *	3.3 *	1.3* #
Total Cereals	3.2 *	1.2 * #	-0.3 *	-0.2 *	3.5 *	1.4 * #
Rice	3.8 *	0.9 * #	0.6 *	0.2	3.2 *	0.6 * #
Wheat	4.0 *	1.9 * #	0.7 *	0.8 *	3.2 *	1.1* #
Coarse Cereals	0.6	0.1	-2.0 *	-1.7 *	2.6 *	1.9 *
Pulses	1.5*	-0.5 #	-0.1	-0.6 *	1.6 *	0.1 #
Total Oilseeds	6.6 *	0.0 #	3.7 *	-0.9 * #	3.0 *	0.9 * #
Sugarcane	3.9 *	1.4 * #	2.1 *	1.6 *	1.8 *	-0.2 #
Cottn (Lint)	4.2 *	0.3 #	0.2	1.4 *	4.0 *	-1.0 #
Jute & Mesta	0.9 *	2.2 *	-1.8 *	0.8 #	2.8 *	1.4 * #

Note : Growth rate has been calculated using kinked exponential method, *ln* (Yt) =a+b(dt+(I-d)k)+c((l-d)(t-k)+et; t=O,...T denotes time, d is a dummy variable (d=1 for sub-period 1 of 1980s from triennium ending (TE) 1981-2 to TE 1992-93 and d=O for sub-period 2 of 1990s from TE 1993-94 to TE 2004-05), k=12 is the break-point at TE 1993-94. The years TE 1981-82 and TE 1993-94 are taken as start and break-points because they are considered as base periods for agricultural purposes and would help us compare between these two periods. * indicates that the growth rate for that period is significantly different from zero at 95 per cent CI and # indicates that the growth rate between the two periods are significantly different at 95 per cent CI.

Source : Computed from data given in RBI (2005)

Using slightly different periodization, Singh (2006) observes similar differences in the annual compound growth rates for the two periods. He also indicates that in the 1980s the growth in value of output per hectare at 2.2 per cent per annum was slightly higher than costs 1.8 per cent per annum whereas in the 1990s the growth in value of output at 0.9 per cent per annum was lower than that of costs at 1.2 per cent per annum and as a result farm business income in recent years has not increased much. Incremental value addition in agriculture (TE 2002-03 over TE 1992-93) shows a shift towards high value addition crops like fruits and vegetables. A calculation for Maharashtra indicates that increase in value of output in recent years is largely for fruits and vegetables that account for less than 5 per cent of the gross cropped area. Evidence from Telengana, Andhra Pradesh indicate that between 1986-2000 real agricultural output growth is significant whereas at the same time there have been significant welfare declines not only for agricultural labourers and marginal farmers, but also for other groups; growth and distress seem to be intertwined (Vakulabharanam 2005).

In 2002-03, the average returns from cultivation per hectare in India are Rs.6756/- in Kharif and Rs.9290 in Rabi. From the total farmer households, 86 per cent with an average land size of 1.2 hectares in Kharif and 62 per cent with an average land size of 0.9 hectare in Rabi had cultivated. Paid out expenses as per cent of value of output is

about 44 per cent in Kharif and 42 per cent in Rabi. This is likely to be higher if one includes imputed family labour or rent on account of own land. Besides, some pattern could be hidden because the calculations are aggregated across all crops. There is wide inter-state variation. Compared to the national average, one observes relatively lower returns per hectare and greater share of expenses in the states of Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu during Kharif. This could be indicative of high costs or crop failure. Share of expenses to the value of output is less than 30 per cent in most of the hilly states : Himachal Pradesh, Jammu and Kashmir, Jharkhand, the North-east states and Uttaranchal indicating that dependence on market based inputs could be much lower here.

Average returns from cultivation is Rs.11,259/- per annum (Table 2).[3] About 60 per cent and 10 per cent of farmer households obtain some returns from farm animals and non-farm business respectively and the monthly returns from these per farmer households are Rs.85/- and Rs.236/- respectively. In addition, farmer households will also get income from wages and salaries. As expected, returns per household increases with land size. Average family size also increases with land size indicating that the increase in per capita returns would not be as large. Across caste groups, scheduled castes (SCs, who generally own the marginal lands) have the least returns and above them are scheduled tribes and from both these groups the other backward castes fare better, but the returns for all these three groups is lower than the overall average. Overall, there is not much diversification and the income of an average farmer household from cultivation would hardly suffice to meet some basic day-to-day requirements.

[3] Value of output in agriculture in constant 1993-94 prices was lower in 2002-03 in comparison with the previous year by about 12 per cent. To account for this if one increases the returns from cultivation by one-third then also it would be less than Rs.15,000/- per annum. Given a family size of 5.5 the per capita per day returns from cultivation turn out to be less than Rs.8/-. Under such scenario, other sources become necessary if the farmer household has to stay above the poverty line.

TABLE 2

Returns to Cultivation, Farm Animals and Non-Farm Business for Farmer Households, 2003

Sub-groups	Prop of farmer HH,%	Returns from Kharif per annum, Rs	Returns from Rabi per annum, Rs	Returns from Farm Animals (30 days), Rs	Returns from Non Farm Busi-ness (30 days), Rs	Average Family Size
Land size						
Near landless	9.9	367	462	125	339	5.0
Marginal	55.6	3243	2667	88	223	5.2
Small	18.1	8098	5922	100	181	5.7
Semi-Medium	10.6	13880	10596	69	188	6.2
Medium	4.8	22841	20940	75	422	6.9
Large	0.9	33494	34600	122	507	7.5
Caste						
SC	17.4	3123	2693	23	213	5.4
ST	13.3	6256	2746	79	138	5.3
OBC	41.5	5237	5044	92	238	5.6
Others	27.6	9559	7695	140	293	5.5
Like farming as a profession						
No	40.1	4156	3337	71	263	5.5
Yes	59.5	7606	6237	103	213	5.5
Total	100.0	6200	5059	85	236	5.5

Note: HH=Household, Rs=Indian Rupees Near landless=0-0.099 hectares (ha), Marginal=O.l-l ha, Small=1.001-2 ha., Semi-Medium = 2.001-4 ha, Medium=4.001-10 ha, Large> 10 ha. Information on caste and whether they like farming as a profession was not available for 0.1 per cent and 0.4 per cent respectively. Returns to Kharif and Rabi are calculated by subtracting paid out expenses from the value of output, which includes by-products. It

does not include family labour or rent for own land. Returns from farm animals and non-farm business are calculated based on 30 day recall. The farmer households will also have other sources of income like wages and salaries.

Source: Calculated from unit level data using 33rd schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.

At a time when one would require greater inputs from the state, it seems to be withdrawing. This is evident from decline in public investment, in the reduced role of formal credit institutions and poor extension service among others. We elaborate on these. Gross fixed capital formation in agriculture as a proportion of gross domestic product (GDP) declined from 3.1 per cent during 1980-85 (Sixth plan) to 1.6 per cent during 1997-2002 (Ninth plan) in 1993-94 prices (Table 3). During the same period, gross fixed capital formation in agriculture as a proportion of total gross fixed capital formation declined from 13.1 per cent to 7.4 per cent and proportion of plan expenditure towards agriculture & allied activities declined from 6.1 per cent to 4.5 per cent.

TABLE 3

Capital Formation and Plan Expenditure in Agriculture

YEAR	GFCF in Agr as % of GDP, India	GFCF in Agr as % of total GFCF, India	Exp on Agr & Allied as % of total Plan Exp, India
1980-85, Sixth Plan (Actuals)	3.1	13.1	6.1
1985-92, Seventh Plan (Actuals)	2.3	9.6	5.9
1992-97, Eighth Plan (Actuals)	1.9	7.4	5.1
1997-2002, Ninth Plan (Actuals)	1.6	7.4	4.5

Note: GFCF indicates Gross Fixed Capital Formation, GDP indicates Gross Domestic Product at Factor Cost, Exp indicates expenditure, Agr indicates Agriculture.

Source: Mishra (2006a).

In recent years, using 1999-2000 prices one observes that gross fixed capital formation in agriculture has declined from 2.2 per cent in

1999-2000 to 1.7 per cent in a quick estimate of 2004-05. The demand and use of water in domestic consumption (particularly, in urban areas) is also on the rise. These have an adverse impact on irrigation and consequently on availability of water for agricultural purposes. In other words, it is the marginal and small farmers who bear the brunt of unavailability of water and its associated yield uncertainty.

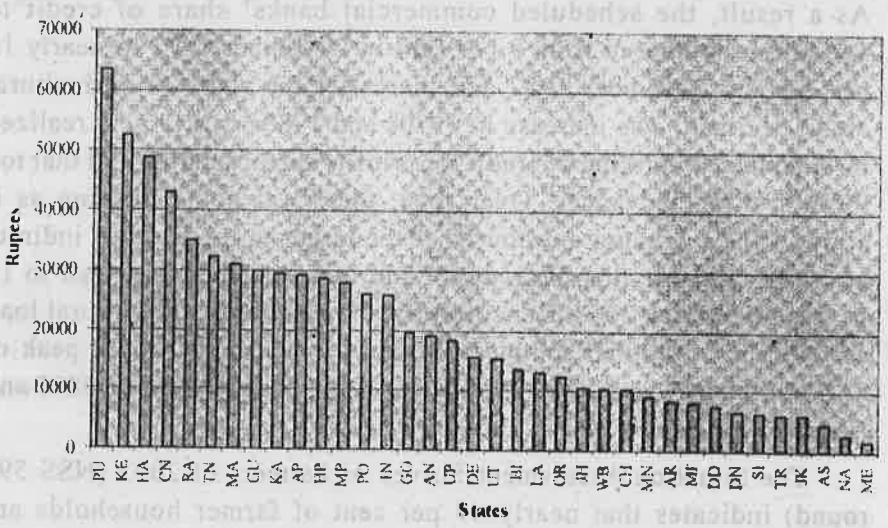
During the 1970s and 1980s the banking industry through affirmative measures led to deployment of credit in agricultural sector. As a result, the scheduled commercial banks' share of credit to agriculture increased from 9 per cent in December 1972 to nearly 18 per cent by December 1987 and thereafter the share of agricultural credit declined. The increase in 1970s and 1980s was largely realized through the earmarking of credit for priority sector lending and that too through direct advances. Over time, there was some dilution as it allowed for achieving one-fourth of the target in the form of indirect advances. Despite this, both direct and indirect credit declined to 11 per cent by March 2004. Concurrently, the number of agricultural loan accounts in scheduled commercial banks that had reached a peak of 27.7 million by March 1992 declined to 20.3 million by March 2002 and is at 21.3 million by March 2004 (Shetty 2006).

The Situation Assessment Survey of Farmers of 2003 (NSS 59th round) indicates that nearly 49 per cent of farmer households are indebted with the average outstanding amount per indebted farmer household being Rs.25,902/-. The states with a higher average outstanding amount of indebtedness are Andhra Pradesh, Chandigarh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Pondicherry, Punjab, Rajasthan and Tamil Nadu (Figure 1). These are also the states with a relatively higher proportion of farmer households indebted, and hence, amount outstanding per farmer household is also higher than the all India average in all these states expect for Himachal Pradesh.

Purpose wise distribution indicates that nearly 58 per cent of outstanding debt is for agricultural purpose (31 per cent capital expenditure and 27 per cent current expenditure), 7 per cent for non-farm business and the remaining 35 per cent is for consumption or other purposes (NSSO 2005). The states with relatively higher proportion of outstanding debt for current expenditure are Andhra Pradesh,

Chattisgarh, Gujarat, Karnataka, Maharashtra, Meghalaya and Punjab. Some of the North-east states and other hilly states indicated that more than 10 per cent of the outstanding debt was for non-farm business; of course the amount of outstanding debt in these states was much lower. One exception is Himachal Pradesh where amount of outstanding debt is higher and 29 per cent of the outstanding debt is for non-farm business.

Figure 1: Outstanding Amount per Indebted Farmer Household



Note: AN=Andaman & Nicobar Islands, AP=Andhra Pradesh, AR=Arunachal Pradesh, AS=Assam, BI=Bihar, CH=Chattishgarh, CN=Chandigarh, DD=Daman & Diu, DE=Delhi, DN=Dadra & Nagar Haveli, GO=Goa, GU=Gujarat, HA=Haryana, HP=Himachal Pradesh, IN=India, JH=Jharkhand, JK=Jammu & Kashmir, KA=Karnataka, KE=Kerala, LA=Lakshadweep, MA=Maharashtra, ME=Meghalaya, MI=Mizoram, MN=Manipur, MP=Madhya Pradesh, NA=Nagaland, OR=Orissa, PO=Pondicherry, PU=Punjab, RA=Rajasthan, SI=Sikkim, TN=Tamil Nadu, TR=Tripura, UP=Uttar Pradesh, UT=Uttaranchal, WB=West Bengal.

*Source : **Calculated from unit level data using 33rd schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.***

Source wise distribution suggests that 58 per cent are from formal sources (Government 2.5 per cent, Cooperatives 19.6 per cent and Banks 35.6 per cent); more than one-fourth of the outstanding debt is from moneylenders and the rest from other informal sources. The states with relatively higher proportion from moneylenders are Andhra Pradesh, Bihar, Manipur, Punjab, Rajasthan and Tamil Nadu. The proportion from moneylenders as well as other informal sources is much lower in Maharashtra where more than half of the loan is from Cooperatives and more than one-third from Banks. Nearly 70 per cent of the outstanding amount is from loans that are more than a year old, that is, they are carried over from earlier agricultural seasons. This is nearly three-fourths in Maharashtra with 84 per cent of these being from formal sources. When we consider the small and marginal farmers then the share of outstanding amount from formal sources is less than 25 per cent. This is of concern because 84 per cent of all farmer households are from this category. These are indicative of a huge unmet demand and as a consequence, a substantial amount of current loans is likely to be from informal sources. Field survey observations in western Vidarbha of Maharashtra indicates that from the outstanding debt of loans taken in 2004 nearly 72 per cent for suicide case households and about 38 per cent for control households are from informal sources.

The farmer is increasingly dependent on the market for inputs. Usage of seeds from own produce are being replaced by hybrid varieties and now with the costlier genetically modified varieties (particularly, in Cotton). Farmers are led into situations where they have to use greater and greater dosage of fertilizers to maintain productivity. Spraying of pesticides has increased over years as the pests develop immunity, but they also have an adverse effect by killing the friendly pests. With new inputs there is a change in technology of cultivation. The farmers' existing knowledge becomes redundant; there is deskilling. In the absence of professional extension service, the farmers are dependent on advice from input dealers leading to supplier-induced-demand. There have been instances of villages opting for a second/third sowing during deficient rainfall years without any dependence on irrigation or even ground water. Besides overuse, usage of spurious varieties of inputs is also a matter of serious concern. Situations where seed sown have led to healthy

growth of the plant but do not yield any produce lead to a suspicion that genetically modified terminator seeds are being sold under cover.

Case study of a farmer owning eight acres of unirrigated land in Yavatmal suggests the following. In 2004, he cultivated cotton in five acres where he had to go in for a second sowing due to delay in rain. This has led to an increase in seed expenses, but the expenses incurred in the second instance was reduced by half by going in for a different variety and using some left over seeds.[4] The total expenditure on seed was Rs.7500/-. After including expenditure on fertilizer (Rs.5000/-), pesticides (Rs.3000/-) and labour (Rs.2000/-) his total costs are Rs.17500/-. He got a produce of 15 quintals, which he sold to the Maharashtra State Cooperative Cotton Growers Marketing Federation (MSCCGMF) through the monopoly cotton procurement scheme (MCPS). At the time of survey, he had received Rs.1500/- per quintal and was expecting another Rs.500/- per quintal. After receiving this balance amount his net income will be Rs.12500/-. The remaining three acres, used for cultivating crops for consumption purposes, under a deficient rain did not give much return. A good crop (say, 4 quintals of Cotton per acre) would have taken this farmer above the poverty line, but now he is below the poverty line.[5] This depicts the transient state of poverty of even a semimedium farmer household. The situation would be worse for marginal/small farmers who are likely to have lower access to credit from formal sources. A tenant farmer will also have additional costs in the form of rent. Further, because of lower volumes of produce or immediate cash requirement or non-legal status of tenancy they may end up selling the produce to traders at lower than the price prevailing in market centres. A slight dip in the price of produce will also have an adverse affect on their income.

[4] It is generally the case that in an acre of land one packet of seeds (910 grams) that costs around Rs.450/- to Rs.500/- for non-Bt varieties and Rs.1600/- for legal Bt varieties would suffice (in 2006-07 agricultural season, due to a court judgement price of legal Bt varieties have come down to about Rs.1250/- per packet). However, due to a guaranteed germination rate of 65 per cent only, farmers end up sowing two instead of one seed and thereby increasing the seed requirement. Under assured water, such practices might reduce.

[5] Updating the Planning Commission poverty line for rural Maharashtra to 2004 one gets an income of Rs.4037/- per person per annum (that is, Rs.336.45 per capita per month).

Opening up of the economy has led to certain cash crops like Cotton and Pepper among others being exposed to greater price volatility. Excess international supply of Cotton at a lower price is also because of direct and indirect subsidies leading to dumping by the USA. Domestic policies in India have led to removal of quantitative restrictions and subsequently reduction of import tariff from 35 per cent in 2001-02 to 5 per cent in 2002-03 increasing our vulnerability to the volatility of international prices. It is at this critical juncture when there is a greater need of price stabilization that the Monopoly Cotton Procurement Scheme (MCPS) of Maharashtra has become non-functional. Disbanding of this scheme in 2005-06 has in fact led to a reduction of Rs.500/- per quintal advance additional price that has in recent years acted as a cushion against the higher costs in the state. The Commission for Agricultural Costs and Prices estimates the cost of production for cotton in Maharashtra at Rs.2303/- per quintal, but the all India minimum support price for the long staple variety of fair average quality is only Rs.1980/-.

The larger agrarian crisis has an adverse effect on farm households. A symptom of this crisis is reflected in the increasing incidence of farmers' suicides.

3. FARMERS SUICIDES IN INDIA[6]

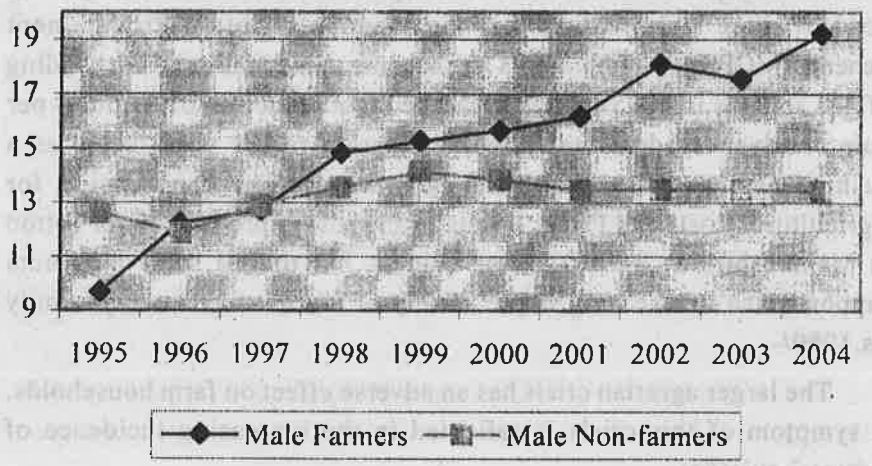
In recent years, farmers' suicides in India have attracted wide media, public policy and scholarly attention. In India, there have been 1,56,562 farmer suicides during 1995-2004. From these, more than four-fifths are males. The suicide mortality rate (SMR, suicide death per 1,00,000 persons) for male farmers nearly doubled in ten years from 9.7 in 1995 to 19.2 in 2004. SMR for male non-farmers has veered around 13; it increased from 12.6 in 1995 to 14.2 in 1999 and then decreased to 13.4 in 2004 (Figure 2).[7] Conditions should be created such that the possibilities of committing suicide should be reduced.

[6] Some related discussions are in Mishra (2006a, 2006b, 2006c, 2006d and 2006e).

[7] The SMR estimates of 2004 are based on provisional data. On the method used for calculating SMRs see Mishra (2006c).

Suicide being a rare event, relatively higher incidence among a sub-group could be indicative of a larger socio-economic malaise. For every individual committing suicide, there could be many more in a state of despair. Inclusive development should address this larger crisis.

Figure 2: SMR for Male Farmers and Male Non-farmers in India, 1995-2004.



Note : SMR for farmers are based on interpolated/extrapolated population for cultivators using 1991 and 2001 Census. For details, see Mishra (2006c).

Source : National Crime Records Bureau (NCRB) (Various Years).

In 2004, the states/union territories with SMR for male farmers higher than the national average are Andhra Pradesh (44.5), Goa (32.1), Karnataka (35.4), Kerala (183.0), undivided Madhya Pradesh (27.7) Maharashtra (57.2), Sikkim (40.5), Tamil Nadu (43.7), Dadra & Nagar Haveli (42.5), Delhi (49.4) and Pondicherry (1495.4).[8] Together these states account for nearly four-fifths of farmer suicides in 2004, more than half from the states of Andhra Pradesh, Karnataka, Kerala and Maharashtra, another one-fourth from undivided Madhya Pradesh and Tamil Nadu and the remaining five smaller states/union territories

[8] The high SMR among farmers in Pondicherry is because of their low population, less then 10000 were cultivators as per 2001 census.

contributing for a little more than one per cent. As indicated earlier, higher farmers' suicide is symptomatic of a larger agrarian crisis. Some of the systemic risks (faced by a large number of households) have been discussed in the previous section.

Now, we take up discussion on idiosyncratic factors based on field survey in western Vidarbha, Maharashtra. From the 111 suicide cases analyzed, 91 per cent were males, 55 per cent in the age group of 31-50 years, and 80 per cent were currently married, nearly 40 per cent were matriculates or with higher education, 58 per cent had more than 10 years of experience. The size-class of land shows that 53 per cent were marginal and small farmers with less than 5 acres of land.

Analysis of suicide case households indicates that on an average 4.8 risk factors were identified per case. Some of the socio-economic risk factors identified are indebtedness (87 per cent), deterioration of economic status (74 per cent), conflict with other members in the family (55 per cent), crop failure (41 per cent), decline in social position (36 per cent), burden of daughter's/sister's marriage (34 per cent), suicide in a nearby village (32 per cent), addictions (28 per cent), change in behaviour of deceased (26 per cent), dispute with neighbours/others (23 per cent), health problem (21 per cent), a recent death in the family (10 per cent), history of suicide in the family (6 per cent) and other family members being ill (4 per cent). These factors are not mutually exclusive. They can coexist and are also interrelated such that they can feed into each other and aggravate each other (see case studies in Box 1).

Box 1: Cases of Suicide Death by Farmers in Vidarbha

Case A: 45 years male. The household has 6 acres of land and has an annual income of Rs.35000/-. Discussion revealed that: (i) delayed monsoon led to double/triple sowing increasing input costs for the household (ii) the deceased individual had entered into cotton trading for which he had taken loans and invested on other farmers and as a result the impact of crop failure by other farmers would also add to his burden, (iii) the individual had plans of getting at least one of his daughters married, (iv) he was also contemplating of contesting the local Sarpanch elections indicating that any economic downfall would affect his social reputation immensely. From this case

one can infer that there is a complex interplay of multiple causes that are not mutually exclusive. After the demise of this individual there were three/four cases in nearby villages in about 7-10 days. This suggests a cascading effect. People from neighbouring villages who also had their own problems could relate to someone who is also a peasant like them.

Case B: A young man in his early 20s. Few years ago his father was not well and he took over the reigns of cultivation and experimented with input intensive cultivation. From the returns he could spend on father's treatment, expenses on a sister's marriage and improved the overall economic condition of the household. Other farmers also started taking advice from him. He was confident of a good crop and initiated plans for getting the other sister married. He had also told his mother that he would like to get married to a girl from a poorer household without taking any dowry. To his dismay, the crop failed...

Case C: 52 years, male. They had 52 acres of land at one time, but now they have 36 acres only - indicating a scenario where economic position is declining. The individual had outstanding loan from formal as well as informal sources and a couple of days before the fateful incident, the private moneylender had visited and insisted on being returned the money or transferring ownership of some land. There were two daughters of marriageable age. There was a burden on higher education of his children. The deceased had been talking some time ago with his children about other suicide cases and given his opinion that is no solution; this perhaps gives a faint indication that he might have been contemplating suicide for some time.

In 79 per cent of the cases, suicide was committed by consuming pesticides. This brings into the question of easy accessibility of a lethal toxic element. A hospital that can treat emergencies like poisoning is on an average more than 20 kilometers away– this limits the access to care.

Comparing suicide cases with non-suicide controls, on an average the former have an outstanding debt that is 3.5 times higher per household (Rs. 38,444/- compared to Rs. 10910). Even after normalizing by family

size and land size the outstanding debt in suicide case households is nearly three times higher. The former have relatively lower ownership of assets and access to basic amenities - (particularly, bullocks a productive and liquid asset is owned by 43 per cent of suicide case households compared to 64 per cent of non-suicide control households). Average family size in suicide case households at 5.53 is greater than that of non-suicide control households at 5.08. The greater family size is particularly true for the number of female members. The average value of produce per suicide case households at Rs.23000 is about 55 per cent of the average value of produce per non-suicide control households. The case-control analysis points to greater hardship among suicide case households.

A statistical exercise is done to compare case-control households. Households suicide status is a binary dependent variable, Y; 1 =case and O=control. The independent variables, Xi's, are outstanding debt in rupees, a yes/no binary variable on ownership of bullocks, outstanding debt per acre in rupees, family size and value of produce per acre in rupees. Using these, we estimate a step-wise logistic regression, [9]

$$\ln\left[\frac{p}{(1-p)}\right] = \alpha + \beta_i X_i + u; i = 1,....5.$$

where *ln* is natural logarithm, p is probability of obtaining a suicide case household, $ln\,[p/(1p)]$ is the log odds ratio of a suicide case household, α is a coefficient on the constant term, β_i's are the coefficients of the independent variables, X_i's, and u is error term.

While discussing results, instead of coefficients, odds ratio, $e^{\beta i}$, are given because the interpretation is more intuitive – for a unit increase in the independent variable there would be a corresponding change in the odds ratio (probability of a suicide case/probability of a non-suicide control).

The result for complete case-control analysis of the 68 pairs of observation is as follows. It gives outstanding debt and absence of bullocks as statistically significant variables that differentiate suicide case from non-suicide control households (Table 4). It suggests that if outstanding debt increases by Rs.1000 then the odds that the household is one with a suicide victim increases by 6 per cent and if the household owns bullocks then the odds that it is a household with a suicide victim

decreases by 65 per cent. Under other restrictions, that is, by controlling for land size, caste or district we also observe that family size and value of produce are significant in explaining differences between suicide case and non-suicide control households.

[9] In the step-wise procedure, a variable is added if it increases chi-square significance by 0.05 and it is dropped if it increases chi-square significance by 0.1.

TABLE 4

Results (Odds Ratio) of Stepwise Logistic Regression Analysis

	Complete Case Control Analysis	Similar Land Size	Same Caste	Yavatmal District
N	136	110	70	80
Debt	1.000061			1.000055
	(0.0000138)			(0.0000176)
	[0.000]			[0.0021
Own Bullocks	0.3462934		.2092665	0.3084751
	(0.1403603)	[.1139936)	(0.1685215)	
	[0.009]		[0.004]	[0.031]
Debt per Acre		1.000325		
		(.0000776)		
		[0.000]		
Family Size			1.352608	
			(2021914)	
			[0.043]	
Value per Acre				0.9997575
				(0.0001234)
				[0.049]
Log Likelihood	-74.6497	-61.682649	-	-42.176024
			42.619212	
LR Chi2	39.24	29.13	11.80	26.55
Prob>Chi2	0.0000	0.0000	0.0027	0.0000
Pseudo R2	0.2081	0.1910	0.1216	0.2394

Note: Round brackets give standard error, square brackets give prob > |z|. The variables are indicated in the order in which they were selected in the step-wise logistic regression.

Source : Mishra (2006a)

There are a couple of points on the administrative or legal dimensions. First, as per the Indian Penal Code (IPC) 309, attempt to suicide is considered a criminal act. This negates the thinking that a suicide victim requires psychosocial care. Call for a humane perspective warrants that suicide be first decriminalized. A court ruling is also of a similar view, but without appropriate legislative backing the statute remains. Second, on the eligibility of surviving members of suicide victim being compensated, the administration has to deal with two errors: first, not to exclude genuine cases; and second, not to compensate undeserving cases. Both errors ought to be minimized but they are also related in the sense that reducing one would increase the other. Conventionally, prudent accounting norms on money to be spent have attuned the administration towards reducing the latter kind of error, whereas from a welfare perspective reducing the former error is more appropriate. Third, there have been some positive legal interventions. It is at the behest of the Bombay High Court that Tata Institute of Social Sciences came up with a report (Dandekar et al 2005). More recently, the Supreme Court has asked the Government of India to review its agricultural policies. A petition by the Government of Andhra Pradesh has led to another recent court ruling in favour of reducing the high royalty charged for the genetically modified varieties of cotton.

The larger agrarian crisis is a matter of serious concern. At this critical juncture when there is need for greater support, the state seems to be withdrawing: public investment is declining, formal sources of credit are not adequate and research and extension is lacking. As a corollary, private investment in the form of digging more and more wells has ended up in the tragedy of commons, informal sources of credit are more costly and the farmer depends on the input dealers for advice leading to supplier-induced demand. The idiosyncratic factors point out a pattern that suicide case households when compared with the non-suicide control households have a higher outstanding debt, lower ownership of assets (particularly, bullocks a productive and liquid asset), a higher family size (particularly, female members) and a lower value of produce. Agriculture-based income is inadequate for the small or even semi-medium farmers. This would be further accentuated because of low yield, poor prices, high input costs or additional expenses (health, ward's education or daughter's marriage). If the situation of the small farmer is precarious then that of the marginal farmer or the agricultural

labourer would be even worse. For these groups, alternative employment opportunities could provide some additional income.

4. Public Policy Interventions for Employment

Keeping the inclusive development perspective in mind this study will elaborate on two livelihood related aspects. They are the pressing problem of farmers' suicides, which is symptomatic of a larger agrarian crisis; and public policy interventions for employment, which assumes importance with the recently enacted National Rural Employment Guarantee Act (NREGA), 2005.

After enactment of NREGA, the Employment Guarantee Scheme (EGS) has been in operation in more than 180 districts from 2 February 2006. As per the Act, failure to provide employment within 15 days after seeking employment will lead to an entitlement allowance: one-fourth of the prescribed wage rate for the first 30 days and one-half of it for any additional days. As these have been recently commenced, we will discuss our observations based on an evaluation of the Sampoorna Grameen Rozgar Yojana (SGRY) (Panda et al, 2005), an earlier employment programme prior to the guarantee, and also draw on some other related work.

Even before the NREGA, entitlement to employment has been in force in Maharashtra since 1979. Under the Maharashtra Employment Guarantee Scheme (MEGS) there was a provision of a monetary compensation of Rs.2/- per day if the state government failed to provide employment within two weeks. The MEGS has been cited as a major programme in the debate on wage employment generation type poverty reduction programmes. It was considered a success story in the 1980s despite its limited size compared to the need and non-implementation of the compensation clause. Doubling of wages in 1988 without adequate budgetary support led to fall in employment by one-third (Ravallion, Datt and Chaudhuri 1993). In the debate on employment programmes, the level of the 'right' wage rate – the minimum at which the very poor group might be offering work or a higher wage rate that could be considered 'decent' and lift the beneficiaries above the poverty line, has been a point of discussion. A major advantage according to advocates of such programmes is the self-selection nature in the sense that it would normally attract participation from the poor group which would otherwise not get sufficient employment opportunities in the normal

economic activities. However, if such a wage rate happens to be very low, it might go against the objective of lifting the poor above the poverty line. A higher wage rate, on the other hand, could defeat the self-selection objective as it might attract people employed in normal economic activities and increase the error in targeting. Rationing available volume of employment would mean the poorest of the poor would have to compete with those around or above the poverty line and the latter having greater chances of selection.

The partial payment of the wages in kind has been justified on grounds that such payments directly help enhance food security of the participants insuring the recipients against fall in their purchasing power due to price rise or unavailability of food grains. The programmes are meant to protect the poor households against seasonal vulnerability in food security. In this context, timing, frequency and quantity of deliveries of food grains become crucial. At the same time, the poor would not prefer full payment of wages in kind as they need to buy non-food items from the market. Moreover, wages in kind increase transaction costs for the funding agency.

While creation of some durable assets in rural areas is a major objective of employment programmes, some authors have recognized a trade-off between the short run relief objective and the long run rehabilitation and development objective (Barrett, Holden and Clay 2004). While employment creation is the immediate urgent need in a relief work, creation and maintenance of productive assets like roads, school buildings, soil and water conservation structures needs more careful planning as per need of the locality. Involvement of local community in identification and maintenance is generally required for success of such programmes.

The objectives of providing employment and creating durable infrastructure under EGS or its predecessor SGRY are modelled on the lines of the MEGS and other similar programmes. Some of the main observations from a recent evaluation study by Panda et al (2005) indicate that the food-for-work component of SGRY had a mixed success record. Most of the beneficiaries were likely to be around or below the poverty line, but there were some deviations indicating failure of

targeting. Average employment available to a beneficiary under SGRY was about 30 days in a year, but some beneficiaries did not get work for more than a week. There was lack of peoples' involvement in identifying beneficiaries and undertaking works useful for the village. Most respondents reported that food grains received were of good or average quality. But the beneficiaries did not receive foodgrains or wages on time.

Poor maintenance of records is a larger issue. Given the objective of supplementing the earning opportunity for the poor during the lean season and natural calamities, the size of SGRY needs to be flexible. This requires coordination between government officials, Panchayati Raj Institutions and local non-governmental organisations. Timing is crucial for the success of SGRY. Demand for regular public works is high during February to June (a time interspersed between two financial years). So, unless sufficient food and funds are available during these months, out-migration creating footloose labour with less bargaining power becomes a regular feature.[10] Other studies on similar programmes have pointed out irregularities in the form of fudging muster rolls, prevalence of corruption, non-availability of work in the lean season, involvement of contractors and absence of provision for maintenance of infrastructure created.[11]

A study by Panda and Mishra (2005) largely involving below poverty line households in two districts of Maharashtra (one in the National Sample Survey (NSS) Coastal region and the other in the NSS Inland Eastern region), indicates that nearly half the below poverty line households were in a situation where all family members did not get two square meals a day at some time or the other during the year (Table 5).[12] This survey was designed to choose 80 per cent poor households in the sample in areas that might be characterized as less than average developed. Adjusting for this, one gets roughly 6-8 per cent rural households facing food shortages at some time or the other during the

[10] For an elaborate discussion on footloose labour see Breman (1996).

[11] See, for example, Planning Commission (2000), Policy and Development Initiatives (2000), and Sen (2003) among others.

[12] The situation was more severe in Jawhar, a tribal taluka in Thane (NSS Coastal Region), which is about three/four hours drive from Mumbai.

year. This figure is in sharp contrast to hunger incidence of 3 per 1,000 rural households or 5 per farmer household in the state reported by National Sample Survey Organisation (NSSO) data for 2003 (59th round).[13]

TABLE 5

Food Deficit Below Poverty Line Households across Seasons (%)

Season	Jawhar, Thane	Yavatmal	Total
N	88	81	169
Winter	14	11	12
Summer	25	19	22
Monsoon	51	31	41
Any one season	48	17	33
Any Two seasons	6	9	7
All three seasons	10	9	9
At some time	64	35	50

Note: N indicates number of below poverty line households surveyed.

Source : Panda and Mishra (2005)

Across seasons, vulnerability was higher during the monsoon months. Many of the food insecure households resorted to migration to make both ends meet. This also affected their utilization of benefits from public facilities like Anganwadi and schools that existed in their villages. Their vulnerability can be understood from the case of a child death discussed in Box 2. One also observed non-payment of wages under public works and denial of food subsidies by not providing appropriate ration cards. There were also instances of some success stories - The "Wadi Project" (horticulture development) linked with MEGS and other programmes lead to improved livelihood opportunities (see Box 3).

[13] At the all India level, 59th round estimates indicate that 16 per 1000 rural households and 12 per 1000 farmer households were food deficit households. Across states, the maximum number of food deficit households is in Orissa: 71 per 1000 rural households and 54 per 1000 farmer households. The estimates for rural households and farmer households are based on different sample frames.

BOX 2: CASE OF CHILD DEATH IN JAWHAR

The anganwadi centre of Nagarmoda village reported 3 deaths and 1 stillbirth in the last two years. One case is from a below poverty line household which also faced food shortage at times. The family loses a son who is a little more than three years of age in November 2003. The boy who suffered from respiratory ailment was taken to the Rural Hospital at Jawhar. After initial treatment the doctor recommended that he be taken to JJ Hospital in Mumbai. Medical expenses would have been taken care of at the public health facility, but other opportunity costs made the family decide to return. Back in the village, neighbours, the anganwadi worker and gram sevak coaxed the family members to take the child to JJ Hospital. A few days later, after trying their luck with local healers, they returned to the public health facility at Jawhar, but it was too late. For this case, the family had sought treatment from local healers, public and private facilities and spent Rs.5000 on medical expenses and Rs.1000 on travel. The family now has three surviving children; one is the deceased boy's twin sister.

Box 3: Successful Utilization of Various Schemes by BAIF in Jawhar

Bharat Agro Industries Foundation (BAIF), a non-governmental organization (NGO), operates in tribal regions of 8-9 states of India. They have some presence in Jawhar taluka of Thane district. Interventions by BAIF in some villages are very recent. We happened to visit a successful experiment in the village of Kelichapada where BAIF has been present for 6-7 years. One of their major interventions is through development of Wadi's, which when literally translated means orchard. To begin with, self-help groups are formed with 6-8 beneficiaries, each having 2-3 acres of land adjacent to each other. In the initial years the beneficiaries in Kelichapada worked on (a) their own plots leading to land development and planting of horticultural crops like cashew, guava and lemon and (b) construction of a water harvesting structure on a nearby stream. The inputs/help provided by BAIF came from different schemes. The formation of self-help groups under Swarnjayanthi Gram Swarozgar Yojana

(SGSY), wages for their labour from Sampoorna Grameen Rozgar Yojana (SGRY) / Maharashtra Employment Guarantee Scheme (MEGS) for three years - the time required for trees to bear fruit, non-wage expenses for land development, water harvesting structure and sapling of fruit bearing trees from MEGS or other government schemes. BAIF has also helped them organize and sell their produce in the market. Today the households no more migrate. The enrolment, retention and attendance of school going children has improved, their consumption and nutritional intake has increased and annual household incomes have more than doubled. BAIF's intervention has also helped landless households take up livestock rearing or other activities.

In Maharashtra, MEGS has been largely successful in providing relief, but not as a poverty eradication measure. The recent introduction of horticulture schemes (mostly in Coastal region) in individual household farms under MEGS has been successful from the productivity point of view (Vatsa, 2005). The share of the poor in the NSS regions of Eastern, Inland Eastern, Inland Central and Inland Northern is higher than their share of the population, but expenditure under MEGS is higher than the share of poor only in Inland Central, a drought prone region. Between 2000-01 and 2003-04, expenditure under MEGS was not higher than the share of rural poor in Eastern, Inland Eastern and Inland Northern regions. In fact, the share of the two latter regions has been declining. Item-wise expenditure under MEGS (Table 6), aggregated for four years (2000-01 to 2003-04), shows that in comparison to its share of the poor relatively greater proportion of expenditure is for roads, forestry and horticulture in the Coastal region. In the Inland Western region it has been for agriculture, irrigation, Jawahar wells and horticulture and for roads, agriculture, irrigation, forestry, and Jawahar wells in the Inland Central region; for irrigation and establishment in the Eastern region and for miscellaneous in the Inland Northern region. Notable region specific expenditure under MEGS are horticulture in the Coastal region (41 per cent), agriculture in the Inland Western region (36 per cent) and irrigation in the Inland Central region (53 per cent). These expenditure patterns under MEGS show that the Eastern, Inland Eastern and Inland Northern regions have not benefited much from this scheme. This indicates poor intervention in agriculture either directly or indirectly through interventions in irrigation and horticulture. It assumes greater

importance because these recent years also coincided with a spate of farmer suicides which was particularly high in the Inland Eastern (western Vidarbha) region of Maharashtra.

TABLE 6

Item-wise Share of MEGS Expenditure Across NSS Regions of Maharashtra, 2000-01 to 2003-04 (%)

Year/Item	Coastal	Inland Western	Inland North-ern	Inland Central	Inland Eastern	Eastern	Maharashtra*	
Rural population, 2001	11.1	28.3	14.4	21.1	17.3	7.8	100.0	(5.6)
Rural poor, 1999-2000	8.8	13.7	18.8	21.3	23.2	14.2	100.0	(1.3)
Item								
Roads#	11.5	12.8	14.4	38.0	13.0	10.3	100.0	(954.8)
Agriculture#	8.4	36.3	6.1	36.7	4.2	8.3	100.0	(929.9)
Irrigation#	0.3	17.2	7.7	53.4	6.5	15.0	100.0	(528.6)
Forestry#	10.7	10.6	13.7	33.2	17.9	14.0	100.0	(331.1)
Jawahar Wells#	7.0	20.5	14.4	25.7	21.6	10.7	100.0	(218.1)
Horticulture#	40.9	19.8	7.4	16.1	13.0	2.8	100.0	(211.9)
Establish-ment#	2.6	19.2	12.2	36.5	13.5	16.0	100.0	(86.7)
Miscella-neous#	5.3	20.4	19.1	43.1	5.9	6.3	100.0	(76.9)
Total#	10.0	21.1	10.6	37.5	10.4	10.5	100.0	(3338.0)
Total, 10 years$	10.4	21.5	9.8	35.8	11.4	11.1	100.0	(5523.4)

Note: * Figures in parentheses indicate total (in crore: number of population/poor and expenditure in rupees). For expenditure under MEGS it excludes certain miscellaneous expenditure at the aggregate level for the state. # Item-wise as well as total expenditure has been combined for four years: 2000-01 to 2003-04. $ Total 10 years data are average for 1994-95 to 2003-04.

Source : Mishra and Panda (2006).

The problems of National Rural EGS in a recent survey in Jharkhand point out the following difficulties: selling of application form for job cards, issuing of job cards to only below poverty line households and providing only one card for joint (not nuclear) households, providing defective job cards with no space to record wage payments, not maintaining muster rolls at worksites, fudging muster rolls, flawed work measurement, non payment of minimum wages, delayed wage payment. People are not aware that they have to apply for work and get a dated receipt for the same, unavailability of worksite facilities like shade for rest, drinking water and creche, creation of productive assets is not up to the mark, fictitious gram sabhas, absence of elected representatives at local levels as elections to local bodies have not been held, involvement of middlemen, and excessive work load on local level government functionaries are some more of the problems. A public meeting held at the end of the survey was attended by 2000 poor labourers from neighbouring villages where pointed questions to the Block Development Officer (BDO) and gram sevakas and the local elected member of the legislative assembly who initially wanted to scuttle the meeting but having failed to do so he had to turn up. This passed on the message that local officials and elected representative are ultimately accountable to the people (Bhatia and Dreze 2006).[14]

One of the major limitations of the current employment guarantee is to restrict employment guarantee to only 100 days per household. This restriction is with the understanding that these households get some employment from other avenues, particularly agriculture. If agriculture is under strain then this assumption will not hold. Thus, in years of agrarian distress or in relatively poorer regions or for some other reason if households demand employment beyond 100 days then the administrative mechanism should try to address it. A failure in this regard will not come under the legal scanner of entitlement under a guarantee, but it would certainly be a failure in the domain of welfare. The success of the programme will also require that the provision is widely disseminated and people are made to be involved in at various stages.

[14] Another positive aspect indicating how different perspectives can come together is that the survey has been conducted by students from Delhi School of Economics and Jawaharlal Nehru University.

A mass social audit undertaken in Dungarpur,[15] a relatively poorer tribal district of Rajasthan from where seasonal migration is widespread, suggests that with a supportive administration and people willing to monitor the ongoing scheme can contain the corruption to a large extent and create assets that not only reflect people's demand (in this drought-prone region first priority was given to building/repairing water-harvesting structures) but would also help in enhancing livelihood opportunities (Sivakumar 2006).

5. CONCLUDING REMARKS

The situation is very complex. As per the 2003 situation assessment survey of farmers, 40 per cent of the farmers do not want to continue in the profession. They foresee a life of poverty and they would like to get out of this. The surge in farmers' suicides, which is symptomatic of a larger agrarian crisis, seems to be spreading. Relief measures should address all possible risks, the most important being the inadequate income that agriculture provides for the large mass of farmers. The income shortfall is further accentuated because of crop loss, market uncertainties (increasing input costs and decline in output prices) and additional expenditure requirements (health needs, wards education and daughter's marriage among others). Without adequate safeguards, the farmer will require more and more credit that will lead him to a quagmire of indebtedness. Interventions in the credit market are required (particularly, to reduce the high cost of borrowing from informal sources), but on their own they are not likely to achieve much. Policy interventions should independently address all possible risks: income shortfalls, crop loss (weather, pests, theft, fire or spurious quality of seeds and other inputs), price shocks, increasing input costs and other uncertainties. Social safety measures should look into health, education and other relevant expenses. If farmers need a strong state support to enhance their livelihoods then the mass of agricultural labourers who depend on farmers would require even greater support.

[15] This social audit involved activists and researchers from across the country and also a few from outside India.

Additional employment opportunities might provide some succour. Public interventions in employment have tried to focus on an appropriate wage rate (a balance between providing decent income and also one that would lead to targeting through self-selection by the poor), the nature of wage payment (some payments in kind to ensure food security and some in cash to meet non-food requirements) and in generating productive assets for the rural community. Some criticisms of these programmes is that the number of days of employment available was low, wage payments were delayed, kind payments were of poor quality, unavailability of work site facilities, creation of productive assets is not up to the mark and most important is siphoning of funds through corruption among others. A major channel of leakage was through fudging of muster roles. The provisions of transparency and public monitoring at each and every stage of EGS work (planning, implementation and stock-taking) under NREGA allows for evaluation of ongoing work through social audit. This would check corruption much more than the annual checks which can only unearth book-keeping anomalies. Despite the limitation of restricting employment guarantee to only 100 days per household, "NREGA has created a sense of hope amongst the rural poor. This sense of hope can be further strengthened if people understand that the act gives them employment as a matter of right, and that claiming this right is within the realm of possibility" (Bhatia and Dreze 2006).

To sum up, the post-reform agrarian scenario has been a story of distress, despair and death. This, however, is not the end of the tunnel. For every death there are thousands in distress who continue to struggle and hope for a better tomorrow. In tackling agrarian crisis or ensuring employment guarantee one has to build on this hope.

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Post-Reform Crisis in Indian Agriculture : A Mixed Response

Rasananda Panda, Ph.D.
Associate Professor
Mudra Institute of Communications,
Ahmedabad (MICA)

Abstract

It has become customary to critically analyze the process of economic reforms from the different sector points of view. Apparently, it has been felt that the crisis in Indian agriculture is more due to the various measures undertaken during the process of economic reforms than to anything else. Perhaps, this has become more highlighted because of the large scale farmers' suicides. The paper makes an attempt to find out the main reasons behind the farmers' suicides and then make an analysis of factors responsible for the crisis in agriculture and examine whether this crisis is due to economic reforms or there are some generic reasons behind this crisis. The paper also suggests some recommendations and identifies the critical success factors for the Indian agriculture.

INTRODUCTION :

The contribution of the agricultural sector to the growth of the Indian economy during the post-liberalisation period is not insubstantial. There has been a steady improvement in the value-added proportion in the agricultural sector. This acceleration in the growth of the agricultural sector has been achieved mainly through the remarkable increase in the growth of total factor productivity in the sector (Dholakia, 1996). But the growth rate of agriculture has decelerated in the recent years.

FARMER SUICIDES :

The rise in the cases of farmers' suicides, especially since the mid-1990s, may prima facie be attributed to their inability to repay the mounting debts due to crop failures; but this really is only a symptom of

the deep rooted ills of the farm sector. The Indian farmers are accustomed to coping with distress which they have been facing rather frequently over the centuries on account of droughts, floods, other natural disasters, epidemics and market fluctuations, besides the flawed official policies. But the kind of distress that agriculture as a whole is going through now has several dimensions that had not often been there in the past. That has made it difficult for the beleaguered peasantry and forced them to resort to suicide.

The all-India data on farmers' suicides rolled out by the Ministry of Agriculture states that suicides were committed by individuals under wholly different sets of circumstances and for different reasons totally unconnected with each other. The causes attributed to the farmers' suicides are crop failure, indebtedness and other economic, social and psychological reasons.

These factors undoubtedly have been at play, but confining this phenomenon to only those causes would amount to an oversimplification of the issue. In fact, it would be unfair to hold any one or a few factors squarely responsible for this disquieting situation. The farm community is usually psychologically a sturdy lot, not likely to take resort to a defeatist tactics like suicide. The farmers forced to shun farming for whatever reasons often looked for employment elsewhere, generally in the near-by *mandi* towns or cities or else turned to unlawful means of earning livelihood (committing robbery or dacoity, for instance). But, taking the extreme step of ending their lives was surely not among the preferred ways of evading difficulties.

Indeed a better perspective of the factors behind the farmers' suicides can be had if we look at the regions where such incidents have occurred the most. Though the deaths have been reported from a large number of the states in the country, the worst affected ones are Andhra Pradesh, Maharastra, Karnataka, and Kerala, and to a slightly lesser extent Gujarat and Punjab. What is noteworthy here is that all these states are agriculturally more developed than the others. But at the same time, these are the states where the cropping pattern is neither diverse enough to hedge the risks, nor has it changed much since long. There is either mono-cropping of plants like cotton, sugarcane, groundnut or some plantation or recurring crop rotation, such as wheat-rice in Punjab.

When viewed in the backdrop of such a scenario, several factors emerge as obvious contributors to the disquiet in the agricultural sector. These include heavy indebtedness; high rates of interest on loans borrowed from the informal sector (money lenders); adverse weather including vagaries of the monsoon; weather or technology failure-driven losses to crop production; stagnant or declining crop productivity due to mono-cropping or prolonged adherence to the same crop sequences; growing dependence on the cash inputs escalating cultivation costs; increased competitiveness in free market; outmoded marketing systems; want of reliable technical advice and market intelligence; and lack of risk protection. These ailments are common to almost all the regions of the country.

To this list can be added factors like diminishing public investment in agriculture, reduction in protection to agriculture in the wake of the new global trade regime without providing a level-playing field for the domestic farmer, and overall neglect of agriculture in policy planning.

The region specific problems of the farm sector include, among others, receding water table requiring heavy additional investments to tap it, growing water-logging and soil salinity in the irrigation command areas, inadequacy of infrastructure for post-harvest management and value addition of the local produce, lack of logistics support, discriminatory sector-specific official policies in states, and more such issues.

The net result of all such factors is that while the level of risks and stakes in those risks have risen spectacularly, the returns from the farm ventures have gradually shrunk. Indeed, the National Agricultural Policy adopted in 2000 had alluded to this aspect without mincing a word. The policy document said, "Agriculture has become a relatively unrewarding profession due to a generally unfavourable price regime and low value addition, causing abandoning of farming and increasing migration from rural areas." Going a step further, it said, "The situation is likely to be exacerbated further in the wake of integration of agricultural trade in the global system, unless immediate corrective measures are taken."

These observations have subsequently been corroborated by the findings of the 59th round of the National Sample Survey (2003); Sidhu

and Gill (2006); and Economic Survey, 2004-05 and 05-06, Government of India.

DECELERATING AGRICULTURAL GROWTH :

The prime bane for the farm sector is indeed the deceleration in its output growth. This is reflected in the annual growth rates dipping from 3.5 per cent between 1980-81 and 1996-97 to a mere 2 per cent between 1996-97 and 2000-01. It dropped further down to just around 1 per cent during the period 2002-03 to 2004-05. What is worse is that this decline cuts across all sectors of crops, except the horticultural crops. Even the livestock sector, which had in the past been growing rapidly has also begun showing relatively modest increase of late. Thus, the overall agricultural GDP growth has averaged below population growth for nearly a decade now.

The fall in investment and capital formation in agriculture is one of the major reasons for the dismal growth rate. The Economic Survey 2005-06 mentions, "The decline in the share of the agricultural sector's capital formation in GDP from 2.2 per cent in the late 1990s to 1.7 per cent in 2004-05 is a matter of concern. This declining share was mainly due to the stagnation or fall in public investment in irrigation, particularly since the mid-1990s."

The mid-term appraisal of the 10th plan revealed that the public investment in agriculture since 1990-91 had amounted to only 0.3 per cent of the GDP. This is despite the fact that 70 per cent of the population lives in rural areas, depending directly or indirectly on farm income for their livelihood. No doubt, agriculture is the prime responsibility of the states, but the states too are guilty of neglecting this sector as far as investment is concerned. The outlays earmarked for agriculture in the states constituted merely four to five per cent of their total plan outlays. In many cases, this is even less than that. The fact that the political leadership in most of the states is from the rural background has not made much of difference in this respect. Much of the funding that goes in the name of agriculture is in the form of expenditure on subsidies like free or cheap power or lower rates of irrigation water and the like. These subsidies have more often than not encouraged indiscriminate and excessive use of inputs like water, which ultimately proves counter-productive, besides leading to degradation of natural resources.

The other reasons for deceleration of agricultural growth, as mentioned in the series of meetings of the Planning Commission include the following: lack of infrastructure, genetic erosion of crop varieties, weak linkage between research and extension, poor delivery and transfer of technical expertise and know-how, lack of irrigation, inadequate infrastructure for post-harvest treatment of crops and value addition of the farm produce, poor quality testing network to ensure adherence to global sanitary standards, and inefficient marketing to ensure remunerative prices to farmers.

Among macro-economic factors that went against the interests of the farmers over the years mention may be made of unfavourable domestic price trends as also the slow down in export growth of agricultural products since the mid-1990s. After 1997-98, agricultural prices in domestic market fell relative to input prices and non-food consumer goods, leading to erosion of purchasing power of the farmers. The impact of these has been visible also in the declining real per capita food consumption after 1998-99. The 59th round of NSS found that the monthly per capita consumer expenditure of about 75 per cent of farmers was below Rs.615.

Besides this, there are several general issues that contributed to the growing vulnerability of the farmers. Traditionally, the farm households used to have a diversified occupational life-style that automatically cushioned the risks against crop failures. The agro-farming systems in vogue in the arid and semi-arid regions of Rajasthan and some parts of Gujarat where crop failures have been endemic can be cases in the point. Inadequate diversification is of serious concern in this context.

STRATEGY AND POLICY RECOMMENDATIONS

Having analysed and listed the problems associated with the Indian agriculture, which may or may not be entirely because of economic reforms, the following recommendations could be made to revive the sector.

(i) Increasing the area under irrigation through a proper irrigation management system involving command area development, catchment area treatment, monitoring of water use by farmers,

streamlining the cropping pattern, rationalizing irrigation charges to cover the costs and appropriate water rates based on economic considerations;

(ii) Introducing HYV seeds for dry-land farming;

(iii) Encouraging regional specialisation;

(iv) Adoption of new technology by farmers for both pre and post harvest operations;

(v) Private sector participation in the form of contract farming.

CRITICAL SUCCESS FACTORS :

Effective translation of the macro level strategy as mentioned above and recommended policy measures into tangible results at the grassroots level depends on several critical factors in a large, diverse and federal country like India. These factors can be enumerated as follows :

(i) Long term political commitment to agriculture free from mutual self interest;

(ii) Shared vision and cooperation of all state governments;

(iii) Increased professionalism among the functionaries dealing with the sector along with domain knowledge;

(iv) Effective co-ordination among various government and other agencies involved in the process of agriculture policy formulation and implementation;

(v) Active involvement of the corporate sector;

(vi) An overall environment of mutual trust and respect among the government, bureaucracy, corporate sector and farmers.

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Agriculture in the Post Reform Era: Issues, Challenges and Policy Options

K.K. Tripathy

Abstract :

Agriculture provides livelihood support to about two-thirds of the country's population and continues to be the backbone of the economy. The contours of Indian agriculture started showing improvement gradually after the mid-1960s with the introduction of High Yielding Varieties, and the growing emphasis on the development of agro-infrastructure like irrigation, input supply, storage, marketing and distribution of food-grains. The revolution, however, was biased towards irrigated regions and the benefits from this were not shared equally amongst all stakeholders across the country. In spite of India's process of economic reforms since July 1991, lack of availability of quality inputs coupled with less vibrant and deficient institutional reforms have continued to plague Indian Agriculture. The time has come to map the existing agricultural infrastructure in the country and to find out the issues and challenges for their speedy resolution. This paper attempts to examine the growth performance of agricultural sector in the country in the post reform era and tries to offer solutions to the issues and challenges faced by agricultural development in India. Efforts have also been made to recommend some strategies which the government has to keep in mind while negotiating in WTO on agricultural issues so as to ensure livelihood security and employment opportunities to the large agrarian population of the country.

* The author is an officer of the Indian Economic Service and is presently pursuing his doctorate in Department of Management Studies, IIT, Delhi. Views expressed are personal.

I. INTRODUCTION

Despite a mere 22 per cent contribution[1] to the gross domestic product (GDP), agriculture still provides livelihood support to about two-thirds of the country's population. Agriculture, the single largest private sector occupation, provides employment to 56.7 per cent of country's work force. Keeping in view the significance of the primary sector in export earning, food security and adequate input supply to the feeder industries like textiles, sugar, rice and flour mills, milk industries etc., any policy change in this sector, positive or negative, would have a multiplier effect on the entire economy.

India has taken notable strides in the agricultural sector during the last four decades of economic planning. After remaining a food-deficit country for about two decades since independence, India's effort in self-sufficiency has produced positive results as the food-grain situation in the country changed dramatically. The contours of Indian agriculture started showing improvement gradually after the mid-1960s with the introduction of High Yielding Varieties (HYV) of crops. The subsequent emphasis was laid on the development of agricultural infrastructure for supply of agro-inputs like irrigation, power, water, seed and fertilizers, creation of storage and marketing facilities and provision of adequate and fair distribution of food-grains.

Innovation in the agricultural technologies and production strategies enhanced public investment in infrastructure, research and development. The green revolution strategies followed in mid-1960s were adopted with much vigour and on a wide scale, especially in those areas which are endowed with irrigation and other agro-infrastructure. However, studies confirm that the spread of green revolution of 1960s has been severely skewed in India during 1960s and 1990s **(Kumar et al, 2005).** In the 1980s, new improved crop varieties, technologies and enterprises were developed for rain-fed, dry wet and waste lands which improved the agricultural productivity and income in such regions **(Chand, 1999).** In 1990s, the deceleration in the agricultural growth was due to decline in the total factor productivity in various cereals which caused concern amongst planners and researchers in the agricultural field **(Kumar et al, 1992).**

[1]During the years 2000-01 and 2005-06 (Advance Estimates)

The defensive position of the country relating to the impact of globalisation and liberalisation has not been clearly dealt by the existing national agricultural strategy. The Uruguay Round of GATT brought agriculture into the World Trade Organisation (WTO) and the trade rules were modified and rewritten. The experience in various important but inconclusive rounds of negotiations in WTO at Doha (2001), Cancun (2003) and Singapore (2005) indicate that Indian agriculture is no more insulated from any development in world agriculture. Further, in the wake of globalisation, agricultural products and commodities will have to play an active role in the country's international trade. In spite of tremendous comparative advantage in agriculture and existing large volumes of trade, India has not yet become a major stakeholder in the world commodity market except in less valued items like tea, coffee, cashew, soya-meal, spices and rice. It is high time that India improves upon the situation by enhancing and actualising her trade competitiveness and achieving the status of a net exporter for commodities in which she has relatively more comparative advantages. The liberalised trade regime in agriculture would definitely have a rippling effect on the price, availability and distribution of domestic agro-products. Thus, it is required to assess the likely impact of globalisation and accordingly modify and rewrite the agricultural strategy for maximising benefits from the new opportunities opened up by trade under WTO.

In this backdrop, this paper makes an attempt to examine the growth performance of the agricultural sector of the country and tries to offer solutions to issues and challenges facing agricultural development in India. In the following section, agricultural performance in terms of investment, growth and productivity has been analysed. In **Section III** attempts have been made to map the input flow to the agricultural sector of India. Issues and challenges in the existing Indian agricultural sector have also been identified in this section. **Section IV** deals with concluding remarks and some suggestions.

II. AGRICULTURAL GROWTH AND PRODUCTIVITY ANALYSIS

The total geographical area of the country is 328.7 million hectares. While the gross cropped area is to the tune of 190 million hectares, the

net sown area is only 141 million hectares. The net area under irrigation is 57 million hectares with a cropping intensity of 134 per cent. The growth in the area under principal crops since independence has been very nominal. In 1964-65, 151 million hectares were under all crops. This increased to 191 million hectares by 2005-06 marking a paltry 26 per cent increase over 41 years. Similarly, the total food-grains production which was 199.44 million tonnes during 1996-97 went up by only 5 per cent. By the end of 9th Five Year Plan (i.e., 2001-02), total food-grain production was 211.22 million tonnes. The average annual growth rate of value added in the sector declined from 4.7 per cent during the 8th Plan (1992-97) to 2.1 per cent during 9th Plan (1997-2002).

Table 1 indicates that as against the target of annual growth rate of 4 per cent during the 10th Plan (2002-07), agricultural growth rate in the first year of the Plan was negative (–6.9 per cent). This might be due to the severe drought like situation in 2002. The same was reversed in the next year with an annual growth rate of 10.0 per cent. However, a deficient rainfall in 2004-05 again caused a decline in food-grains production as well as the rate of growth of agriculture and allied sectors to a mere 0.7 per cent. The advance estimate for the years 2005-06 and 2006-07 also indicates a less than targeted 4 per cent growth rate in agriculture.

TABLE 1:

Annual Average Growth Rate (at Constant Prices)

(in per cent)

Five Year Plan	Overall GDP growth Rate	Agriculture and Allied Sectors
7th Plan (1985-90)	6.0	3.2
Annual Plan (1990-92)	3.4	1.3
8th Plan (1992-97)	6.7	4.7
9th Plan (1997-2002)	5.5	2.1
10th Plan (2002-07)		
2002-03	3.8	–6.9

2003-04	8.5	10.0
2004-05	7.5	0.7
2005-06*	8.4	2.3
2006-07**	7.5-8.0	2.2

* Advance Estimate of CSO (February, 2006) and Revised Estimate of RBI (June, 2006)

** RBI's Projection (June, 2006)

Source : CSO, RBI, Economic Survey, 2005-06 and Annual Report, Ministry of Agriculture, 2005-06

The food-grains production in the country during 2000-01 and 2004-05 witnessed severe fluctuations. As against 196.8 million tonnes of food-grains in 2000-01, only 174.8 million tonnes were produced in 2002-03. During 2004-05, the total food-grain production was to the tune of 204.6 million tonnes (Table- 2).

TABLE 2 :

Food-grains Production

(Million Tonnes)

Crop/year	5th Plan (1973-74)	8th Plan (1996-97)	2000-01	2001-02	2002-03	2003-04	2004-05
Rice	44.05	81.74	85.0	93.3	71.8	88.3	85.3
Wheat	21.78	69.35	69.7	72.8	65.8	72.1	72.0
Coarse Cereals	28.83	34.10	31.1	33.4	26.1	38.1	33.9
Pulses	10.01	14.24	11.1	13.4	11.1	14.9	.13.4
Total	104.67	199.44	196.8	212.9	174.8	213.5	204.6

Source: Ministry of Agriculture, Government of India

The average annual food-grain production between the years 2000-01 and 2004-05 was only 200.5 million tonnes. This indicates that on an average, 1.05 tonnes of food-grains are produced in a total gross cropped area of 190 million hectares. This also shows the abysmal yield rates of the food-grains in the country. Though India accounted for 21.8 per cent of global paddy production, the yield per hectare in 2002 was less than that in the neighbouring Bangladesh and Myanmar, and only about a third of that in Egypt, which had the highest level in the reference period 2002 **(Table 3).**

TABLE 3:

Yield of Selected Commodities in a few Countries during 2002

(Kg/Hectare)

Country	Rice/Paddy	Wheat	Maize	Sugarcane	Tobacco Leaves	Groundnut
Bangladesh	3448	2164	NA	39890	1233	NA
Egypt	9135	NA	7789	119893	NA	NA
India	**2915**	**2770**	**1705**	**68049**	**1353**	**794**
Japan	6582	NA	NA	NA	NA	2336
Myanmar	3532	NA	NA	NA	NA	NA
Pakistan	2882	2262	1769	48042	1848	NA
USA	7372	2872	8398	80787	NA	2869
World	**3916**	**2720**	**4343**	**65802**	**1589**	**1381**

NA: Not Available

Source: Economic Survey, 2005-06 and 10th Five Year Plan (2002-07), Government of India.

The low productivity and constrained growth situation witnessed in Indian agriculture may be due to several reasons, which are described below.

Investment in Agriculture

Firstly, the macro-economic reforms of July 1991 led to a fiscal constraint which, in turn, restricted public sector investment in almost all sectors including agriculture. This limited public investment acted as a constraint on the flow of private investment as both are complementary to each other. The statistics on capital formation in Indian agriculture show a decline in the share of the agricultural sector's capital formation in GDP from 2.2 per cent in late 1990s to 1.7 per cent in 2004-05. This declining trend was mainly due to the stagnation or fall in public investment in irrigation, particularly since mid-1990s. The share of public investment which was Rs.7,754 crore in 1999-00 (at 1999-00 prices) declined to Rs.7,018 crore in 2000-01. The same was Rs.12,591 crore during 2004-05. However, the investment in agriculture as a per cent of GDP at constant prices marked a declining trend during these periods **(Table 4).**

TABLE 4 :

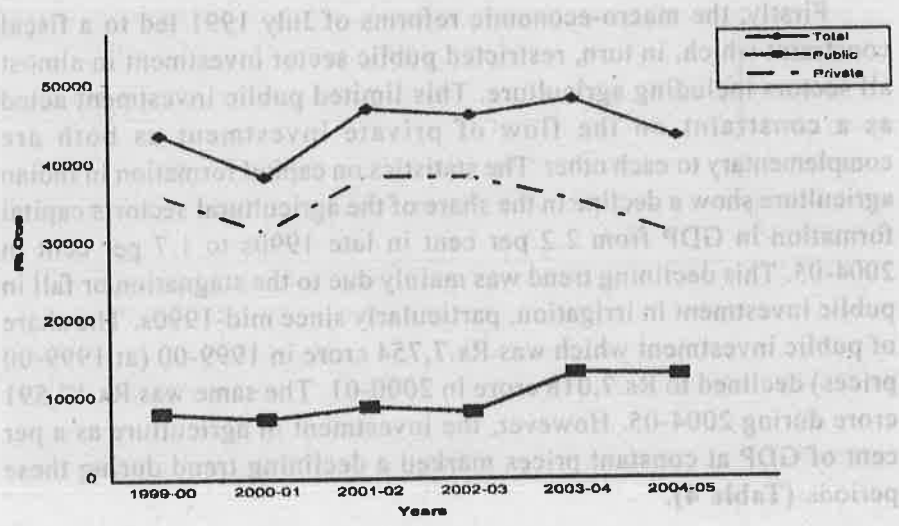
Gross Capital Formation in Agriculture

YEAR	Investment in Agriculture (Rs. Crore)			Share in Agricultural Gross Investment (per cent)		Investment in Agriculture as a per cent cent of GDP at Constant Prices
	Total	Public	Private	Public	Private	
1999-00	43473	7754	35719	17.8	82.2	2.2
2000-01	38176	70.18	31158	18.4	81.6	1.9
2001-02	46744	8529	38215	18.2	81.8	2.2
2002-03	45867	7849	38018	17.1	82.9	2.1
2003-04	47833	12809	35024	26.8	73.2	2.0
2004-05	43123	12591	30532	29.2	70.8	1.7

Source: Economic Survey, 2005-06

Share of private investment in agricultural gross investment showed an increasing trend during the year 2000-03 after which the same kept on declining till 2004-05. In rupee terms, while the private investment in agriculture was to the tune of Rs.35,719 crore during 1999-00, the same declined 15 per cent to Rs.30,532 at the end of 2004-05.

Chart I : Investment in Agriculture (1999-00 to 2004-05)



From **Chart I** it is evident that even after one and a half decades of economic reforms, the investment in agriculture has been more or less stagnant as there was only 0.8 per cent increase in the total investment in agriculture during the period from 1999-00 to 2004-05. Public investment witnessed an increasing trend only after 2002-03. However, this increase was offset by a sharp fall in private investment in agriculture during this period.

Protection : Agriculture vs. Industries

Secondly, the industries in India experienced a high degree of protection for a long period during the 1970s and 1980s as the trade policy was in favour of the Indian industries. However, during the same period, Indian agriculture witnessed an un-protected regime. Studies relating to protection accorded to industry and agriculture, particularly during the post-green revolution period, revealed that trade policies have favoured industry and discriminated against agriculture **(Rao & Gulati, 2005).** The process of economic reforms initiated in 1991 was expected to bring in such policies and strategies in agriculture, which could lead to the emergence of favourable terms of trade for agriculture. Opening up of Indian agriculture under WTO and the expected changes in world agriculture would most likely accelerate this process of correction in terms of trade. However, the negotiations in WTO, one after another, have remained inconclusive without arriving at sustainable formulae for all-round development of agricultural trade and commerce.

The macro scenario of the economy in the post reform era is poised to witness many changes in the domestic and international agricultural strategies. However, the fact remains that this growth has not been shared by all sections of the society. This becomes more evident when one looks at the poverty figures of the country. While the poverty estimates of Planning Commission Expert Group indicate that as much as 26.10 per cent of India's population were reeling under poverty line by 1999-2000, a recent finding of National Sample Survey Organisation (NSSO's 2004-05 large-sample round) puts the poverty figure 22 per cent in 2004-05.

Agricultural Price Policy

Thirdly, the prevailing policy for fixation of support prices of food-grains and their procurement and distribution mechanism have not been restructured satisfactorily in the post-reform era. The populist policy

of the government led to the enhancement of procurement price of various food-grains and impacted on the volume of food subsidy which, in turn, rose to an unsustainable maximum. Lack of domestic marketing reforms limited the free movement of agro-produce across the States. While in some States monopolistic procurement was the rule (like Cotton in Maharashtra), others continued to impose purchase levies on essential commodities like rice and sugar. An ambiguous situation has also emerged in the Indian agriculture due to the recent experience of deceleration of demand growth rate for food-grains despite the rise in per capita income and the decline in the relative prices of food-grains. This downward shift in the demand for food-grains is obvious in rural Punjab and Haryana, despite a high per capita income growth **(Gulati & Narayanan, 2003).**

The measures undertaken to rejuvenate and popularise commodities futures market in the post-reform era have not been very successful. If we really want to increase the economic standards of the poor farmers, the government has to take adequate and appropriate action towards policy relating to the introduction of futures markets, amendment/ abolition of Essential Commodities Act (for flexible movement of essential goods), stocking and pricing of goods[2].

III. AGRICULTURAL INPUTS: ISSUES AND CHALLENGES

The slogans like 'food for all', 'sustainability in agriculture' etc., can be turned into reality only when effective steps are taken to ensure agro-extension services and adequate and timely provision of quality inputs like irrigation, fertilizer, credit, seed, power to the needy small and marginal farmers. The need of the hour is to enhance productivity and to ensure livelihood security in both irrigated and rain-fed areas. This can be achieved if we ensure more and more public-private partnerships, empower women for their active involvement in agriculture, strengthen agriculture and horticulture through modern innovations and technology revolutions, sustain and expand trade in farm-commodities without neglecting sanitary and phyto-sanitary dimensions of the sector. The role of quality inputs in the development of Indian agriculture in the coming periods cannot be overemphasised. The following paragraphs describe the emerging issues in the usage of agro-inputs and various problems in their effective management.

[2] Government of India relaxed some of these restriction with a view to reducing unprecedented stocks of food grain with FCI during 2002-03 and 2003-04 (see Economic Survey, GoI, 2002, 2003 & 2004)

Irrigation

Growing population, unsustainable land use practices, extensive deforestation, increasing demand of water-intensive industries and agriculture are leading to the fast depletion of world's fresh-water reserves and becoming the basis for many water-related contaminated diseases. The exploitation of natural resources like water has a direct bearing on agricultural productivity, food security and public health. Since this has a direct linkage effect on the environment and society at large, the much anticipated rapid agricultural progress in an agrarian country like India requires effective management of this vital agricultural input. Since rainfall in India is confined mainly to the south-west monsoon months of June to September and is usually quite erratic, the creation of potential irrigation facilities and achievement of the potential becomes the need of the hour.

Though India experiences about 1,100 mm rainfall annually, frequent floods and droughts are common features of the country's monsoon ecology. In many regions, long duration dry spells followed by heavy down pour affect crop productivity severely. It is pointed out that in the summer months, nearly 60 per cent of total tube wells do not function and most of the ponds, water tanks and other water resources dried up due to fast depletion of water table and less recharge of ground water aquifer. In states like Punjab and Haryana, water table, on an average, is receding 8 to 10 metres a year. Thus, emergence of frequent erratic rainfall pattern and unsustainable water use in India calls for effective management of rain and surface water to ensure sustainability in agricultural production.

Considering the erratic rainfall pattern and ineffective management of water resources in the country, it may be said that the drinking water crisis and scarcity of water for agricultural purposes are going to pose grave problems in the coming days, if no step is taken to complete various under construction multi-purpose river valley projects and renovate the conventional water harvesting projects. There were 171 Major, 259 medium and 72 extension, renovation and modernisation on-going irrigation projects in the country at various level stages of construction at the end of the 9th Five Year Plan (2002) with a spill-over cost of Rs.75,690 crore. Efforts should be made to complete the planned irrigation projects by prioritising and allocating resources for their immediate completion. Further, there is a need for the government,

non-government organizations and public to lay stress not only on the renovation and construction of new water harvesting projects, but also on the revival and reintroduction of traditional water harvesting techniques followed traditionally.

The Traditional Water Harvesting Practices (like *Bandh, Munda, Kata, Chahala, Sagar*[3] in State of Orissa) were evolved keeping in mind the unique topography of a particular region. They were adopted for harvesting and managing rain water. The uses of the water bodies were defined season-wise, and management terms and systems were framed in such a way as to benefit the largest possible number of people with the existing resources at minimal costs. These methods, if revived and emphasised for reintroduction will not only ensure irrigation in summer months, but will also help in controlling soil erosion, unnecessary wastage of water, recharging water aquifer.

Though various State Governments have initiated respective policies relating to water resource management through democratic decentralization and devolution of power to grassroot *gram panchayats* and formation of user groups and self-help groups in the rural areas, yet the reality is that the same has not been grounded to its fullest extent. Thus efforts are to be made to mobilise the farmers to form of Water Users' Association (WUA) (like *Pani Panchayat* (PP) in Orissa) for smooth operation and maintenance of the downstream parts of the irrigation canal system like minors/sub-minors, distribution of irrigation water among water users and collection of water rates to WUA.

CREDIT

The credit flow to agriculture and allied activities increased from Rs.46,268 crores in 1999-00 to Rs.1,15,243 crore in 2004-05. Against the projected credit flow of Rs.1,41,000 crore during 2005-06, an amount of Rs.1,17,899 crores has already been extended by all banks till December 2005 **(Table 5).**

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[3] Bandh is a traditional pond located in lower ridges. *Munda* is a semi-circular structure found on the upper ridges of a village just above the agricultural fields and used for percolation purposes and to retain the moisture level of the fields. *Kata* is a variation of the *munda* that collects water from a larger catchment area. *Chahala* is a rectangular tank dug within a paddy field but without any embankment and used when water is insufficient for irrigation, *Sagar* is a community owned structure measuring around eight hectares and situated just below hills and mountains that catches rain water.

TABLE 5:

Institutional Credit Flow to Agriculture

(Rs. Crore)

Agency	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06*
Co-operative Banks	20,800	23,604	23,716	26,959	30,639	28,947
Regional Rural Banks	4,220	4,854	6,070	7,581	11,718	11,146
Commercial Banks	27,807	33,587	39,774	52,441	72,886	77,806
Total	52,827	62,045	69,560	86,981	1,15,243	1,17,899

* upto December 31, 2005

Source: Economic Survey, 2005-06

The flow of credit to agriculture from Co-operative Banks was Rs.20,800 crores in 2000-01 and increased to Rs.28,947 crores at the end of the calendar year 2005-06. The credit extension by RRBs and Commercial Banks has also witnessed a substantial increase during these periods. Considering the price levels in the States and severe variation in the credit off-take from financial institutions across the States in the country, it will not be untrue if we say that the objective of ensuring timely and adequate institutional credit to the needy farmers in the country has been satisfied. Even today millions of farmers in the country are still unable to liberate themselves from the clutches of the so-called moneylenders and exploiters. This is more predominant in a situation where a large part of the rural areas in the eastern and northern regions are either un-banked or are suffering from severe staff-shortage in the existing bank branches.

At this juncture, efforts should be made to augment the flow of short-term credit (for seasonal agricultural operations) to the farmers through innovative schemes like Kissan Credit Card (KCC) Government should initiate action plans for reviving co-operative credit system as per the recommendation of the Task Force on Reviving the Co-operative Credit Structure (Chairman: Prof. Vaidyanathan). Emphasis on Self-help Groups-Bank linkage programme would also lead to reduce adverse impact of credit burden on farmers in the rural areas. Keeping in view

the suicidal deaths, depression level amongst the small and marginal farmers in states like Maharashtra, Andhra Pradesh, Orissa and West Bengal, the government has to provide insurance services to all the farmers so that in the case of crop failure, natural calamities and pest and disease attack, they could get the requisite financial support especially in disaster years.

Seeds

Quality seeds, the basic input for agriculture accounts for 25 to 30 per cent of increment in the crop-yield. In India, 80 per cent of the farmers rely on farm-saved seed. The low seed replacement rates results in low productivity. The public sector continues to play a dominant role in the production and distribution of low-value high-volume seeds like cereals, pulses and oilseeds whereas, seeds in high value low volume segments like vegetable and horticulture crops witnessed private sectors' intervention in India. The national seed policy of Government of India calls for a convergence between public and private sector. Since India is one of the signatories of WTO and is regularly negotiating with the developed and developing world on agricultural trade, commerce and plant protection etc., the time entails an enabling environment not only for promoting quality seed production in the country, but also to protect the rights of the farmers and plant breeders by promoting investment in development of new varieties. The farmers and other private players in agriculture should take advantage of the liberalised and simplified seed export and import regime to facilitate the availability of quality seed to the Indian farmers and help India to become a global hub for quality seed production.

Fertilizers

There is huge variation in the consumption of fertilizers across States. In the plains, per hectare consumption was high in Punjab, Haryana, Uttar Pradesh and Andhra Pradesh, but low in Rajasthan, Orissa and Madhya Pradesh and the North-Eastern States **(Table 6).** This shows that the poorer the region, the lower the purchasing power and thus the lower the fertilizer use in agriculture.

TABLE 6 :

Consumption of Major Fertilizers

(Lakh Tonnes)

Category	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06 (April-Sept.)
N	109.2	113.1	104.7	110.8	117.1	64.4
P	42.2	43.8	40.2	41.2	46.2	25.1
K	15.7	16.7	16.0	16.0	20.6	11.5
Total	167.1	173.6	160.9	168.0	183.9	101.0

Source : Ministry of Chemicals and Fertilizers

There has been no increase in the selling prices of fertilizers sine February 28, 2002, though the price level has marked an increasing trend. Further, it is also estimated that the selling prices of fertilizers are much less than its cost of production, which shows that the gap between these two is being regularly borne by the government. This is nothing but the subsidy given on fertilizers. Undeniably, once the negotiation on agriculture is complete in WTO, India will have no way but to reduce its direct and indirect subsidy on agriculture. The time, thus, has come to assess the consumption pattern of these chemical fertilizers, their impact on ecology and the likely burden on the farmers and productivity of crops once the subsidy is withdrawn by the country's government as per the WTO recommendation.

IV. CONCLUDING REMARKS

The social and economic vulnerability of agriculture in the developing countries is reflected in factors, such as, substantial contribution of agriculture to their GDP, low level of commercialisation) and diversification of agriculture, low productivity, weak market-orientation and market-linkage, prevalence of small and marginal uneconomical operational landholdings, underdeveloped or lack of adequate agro-infrastructure, heavy reliance on monsoon, susceptibility to natural calamities, and dependence of a very large per centage of population on agriculture for their livelihood. Even after 5 decades of green revolution and one and half decades of economic reforms, the issues and rigidities in Indian agriculture have not been successfully resolved. With increasing population and enhanced pressure on agro-

produce, there exists every justification to map the existing agricultural infrastructure in the country and resolve all the issues and problems towards ensuring food and livelihood security to millions of the Indian poor farmers.

Agriculture even today is considered to be a viable source of livelihood and effective rural job creator. Food and livelihood security is not only of great economic significance, but also a very important socio-political concern in the large agrarian economies like India. The Government has announced the first ever National Policy on agriculture where agricultural packages are designed to stimulate growth. The policy has to integrate various strategies aiming at better management of food economy, removal of constraints on the movement of food-grains within the country and enhancement of credit flow to farm sector through institutional channels. Trying out special initiatives like credit-linked subsidy scheme for the construction of cold storages and rural go-downs and reducing rate of interest for funding the storage of crops could enable farmers to enhance their productivity and holding capacity to sell their produce at remunerative prices. These along with convergence of multiplicity of schemes, pooling of funds from different sources, integrating watershed works with joint forest management, rain water harvesting initiatives, linking various coordinating departments like Departments of Water Resources, Agriculture, Rural Development etc. are the need of the hour.

The issue of liberalisation of world trade in agriculture has called for intense deliberations and discussions amongst the member countries of WTO. Negotiations in the WTO on agriculture have been the major bane of contention between both developed and developing countries. WTO-watchers feel that the negotiations are likely to continue for a few years as there are serious differences amongst the major players. It is highly desirable that the negotiations in WTO on agriculture should protect the interest of the small and marginal farmers. India has a comparative advantage in the production and export potential in agro-products like rice, spices, tea, coffee, cashew etc. Further, the total aggregate value of subsidies given to farmers, namely, subsidies on fertilizers, electricity, seeds, pesticides and cost of credit available to all crops as well as agricultural commodities is estimated to be well below the ceiling prescribed in the Uruguay Round agreement. India inhabited by more than 26 crore of poor people requires government

subsidies for research, pest and disease control, marketing and promotion services, infrastructural services including capital expenditure for electricity, roads and other means of transport, marketing and port facilities, irrigation facilities, drainage systems and dams etc. This should be kept in mind while negotiating on subsidy reduction in the WTO rounds.

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Rationale of Agricultural Exports in Post-trade Liberalisation Regime

(Prescription for Domestic Resource Cost and Export Performance Ratio)

Dr. Raghaba Nanda Mohapatra
Dept of Economics
S.D. Women's College,
Rajgangpur

I. INTRODUCTION

Export strategy in India confronts several issues, specially the choice of policy instruments. Questions are often raised about the utility and rationale of prevailing export promotions schemes even while these interventions are considered necessary to keep Indians exports competitive in the international market. A good amount of efforts have been made by researchers to evaluate the economics of export promotion measures taken by the government from time to time.

It goes without saying that export expansion is widely regarded as a vehicle to attain a higher rate of economic growth. Since 1991 a number of measures have been taken to correct the 'anti-export bias' of previous policy regime.

The rest of the paper is organized as follows. Section I presents an overview of the growth performance of India's exports highlighting the distinctive feature of agricultural exports of post 1991 period. Section II is devoted to Domestic Resource Cost and observes a positive association between DRC and social opportunity cost. Section III highlights the EPR (Export Performance Ratio) and comparative advantage for agricultural products (horticulture and commercial corps) Section IV presents the major findings and prescribes the implication of expert strategy.

Agriculture in most developing economies is the core sector providing a livelihood to a significant proportion of population in rural areas. The sector has immense importance for poverty alleviation and employment generation. Agriculture accounts for about 25% of Indians

national income. The share of agriculture in national income has been declining from 56.5% in 1950-51 to 52.1% in 1960-61, 45.7% in 1970-71, 39.6% in 1980-81, 33% in 1990-91, 25.2% in 1999-2000, 24.2% in 2000-01, 24.3% in 2001-02. The process of economic reform, and gradual opening up of Indian agriculture to world market is likely to turn the term of trade in favour of agriculture creating a better incentive environment for agriculture than has been the case in preceding decade. A major reform in supply-side factors is needed to dismantle all export controls on agricultural commodities. The new circumstances imply the emergence of new trade opportunities which will voluntarily lead to cropping decision and certainly in the over all efficiency in the use of domestic resources for expert promotion of various crops in relation to price. The issue of domestic resources in agriculture never came to center stage in policy formation. "There is considerable potential for raising India's share in world exports of agricultural commodities. Out of various agricultural commodities Rice, Cotton and Wheat seem to have emerged as good exportable up to the point particularly after the recent adjustment in exchange rate and convertibility of rupee on trade account" (Gulati: 1991). Beyond a point the rise in price of exportables or fall in prices of importable may affect the income of farmers. In view of the uncertainties of world suppliers, the country can run the risk of undermining its food security by running down the domestic stock below a certain critical minimum, and commitment of public distribution system to meet the requirement of large sections of population still living below the poverty line (Hanumanth: 1994). The crux of the problem is of freeing trade without undertaking measures for augmenting capacities and building "safety nets" for the poor, may result slow growth, high price of foodgrain and accentuation of regional disparities. It also goes without saying that agriculture identified as one of the potential sectors for harnessing India's competitive advantage in international trade and the target is to achieve trade and the target is to achieve country's overall trade target of 1% or more of share in world trade. Agriculture has played a significant role in earning foreign exchange through export of traditional items like tobacco, tea, coffee, cashew spices, raw cotton, basmati rice. Due to faster growth of non-agricultural exports the share of agriculture in total export came down to 18% in early 90s. The reform of 1991 rejuvenated agri-exports and in short span of five years between

1991-92-96-97-export rose from $ 3.2 to $ 6.87 bn. This helped to affirm the view that Indian agriculture is highly export competitive. Global liberalization of agriculture following WTO was seen as a great opportunity for promoting experts. Surprisingly some commodities faced a paradoxical situation. For example wheat procured by Government was not finding market. Wheat import flowed heavily in to domestic market in 1999 due to removal of quantitative restriction. Adverse price situation led to apprehension about the implication of trade liberation and WTO commitments. Despite these, India has been able to maintain a steady flow of exports of those commodities, which are consistent with emerging global demand partner such as fresh processed fruits. The Government has initiated strategic planning in the context of changing paradigm of world trade in agriculture exports and make them competitive world wide through partnership with private sector; farmer and Government and non-Government agencies. (Gulati: 1994) Rao and Gulati maintain "the process of economic reform and gradual opening up of Indian agriculture to world market is likely to turn the term of trade in favour of agriculture creating a better incentive environment for agriculture". For the first time since independence India has been a net exporter of foodgrain consecutively for last six years, net export amounting on an average to around 1.8 million tonnes per annum. In India there have been few studies to report competitive advantage of agricultural commodities. Gulati and Sharma (1998) have worked out the comparative advantage for a large number of agricultural commodities. Measures like Export Performance Ratio are used to evaluate comparative advantage based on observed pattern of trade.

II. REVIEW OF LITERATURE :- DOMESTIC RESOURCE COST: (METHODOLOGICAL FRAMEWORK)

The DRC or Domestic Resource Cost may be defined as the value of domestic resource cost needed to earn or save a unit of foreign exchange through the production of the commodity under consideration. The DRC concept has different variants. The concept has been contributed by Bruno (1967 and 1972), Krueger (1966, 1972), Bela Balassa (1972), Y.R. Punchamukhi (1978), J. Bhagawati and Padma Desai (1970), Bruce (1980). The variant has been used by Ashok Gulati in his masterpiece work, "Trade Liberalization and Indian Agriculture" (1999).

The concept of DRC relates to the measure of real opportunity cost in terms of total domestic resource of producing or (saving) a net marginal unit of foreign exchange by comparing it with some measure of the economy's 'real' or accounting exchange rate. DRC is used in two senses, namely as an ex-ante measure and as an ex-post measure. In the ex-ante sense the DRC measures the social opportunity cost of production which can be applied as resource allocation principle. As an ex-post measure DRC shows the cost to the economy of its present policies. The DRC of agricultural product produces less than the foreign exchange rate and suggests comparative advantage in producing these products.

$$DRCi = \frac{\sum_{j=K+1}^{J} AijP\frac{s}{j}}{P\frac{w}{i} - \sum_{j=1}^{k} AijP\frac{w}{j}}$$

DRCi = Domestic Resource Cost of saving or earning a unit of foreign exchange through production of one unit of ith commodity.

AiJ = Quality of the j^{th} input required to produce a unit of commodity

P_i^S = Shadow price (Social opportunity cost) of j^{th} non-traded input.

$\sum_{j=K+1}^{J} AijP_j^S$ = Normative cost all inputs (needed to produce one limit of commodity)

Pw_i = World Reference Price adjusted to transport cost market expenses.

$\sum_{j=1}^{k} AijP_j^w$ = World value of those J inputs directly traded plus indirect traded element.

J = 1... K – directly traded inputs

J = K+ 1...J – Primary inputs

DRC is true cost of domestic resources that are needed to earn or save a unit of foreign exchange. Shadow price of foreign exchange of products is also shown. This indicates the export profitability of agricultural exports. For example one rupee is spent on export promotion measures for an agricultural product and the capacity of the product to earn equal value of foreign exchange in return. It involves social opportunity cost. The DRC is always expressed in local currency. RCRi = DRCi Resource Cost Ratio = Domestic Resource Cost. Resource Cost Ratio is a parameter of export viability. It indicates the degree of comparative advantage in producing some crops. "Shadow Price" of a resource is defined as value of benefit foregone by society in employing those resources in production of a particular commodity. Shadow price or the opportunity cost is the marginal value of the product of a resource foregone elsewhere because of its use in the production of a commodity. (Ashok Gulati and Tim Kelley: 99). Gulati and Kelley's study shows that three out of thirteen crops are rabi crops and the remaining are khariff (Rice, Maize, Pigeon pea, Groundnut, Soya bean, Sun flower, Cotton, Sugarcane). These 13 crops account for more than three fourth value of Indian crop of agriculture. Gulati and Kelley have found the RCR for various crops. Their study shows that resources are more efficiently utilized in the cultivation of wheat and chick-pea. Haryana, Madhya Pradesh, Punjab, Rajasthan and U.P. are major wheat growing areas. The domestic production of wheat is preferable. The DRC of wheat is 0.55 (Gulati and Kelley: 99) Wheat is an exportable commodity. It is economically viable for Punjab and Haryana to export wheat. There is automatic protection to domestic producers and will result lower REC of domestic production.

Chick-pea production is economically efficient from social point of view in an open economy. Rapeseed-mustard is lower. The domestic price of rapeseed mustard is higher. Wheat and Chicken pea compete with mustard. Rice, Maize, Soya bean, Pearl, Pigeon-pea Groundnut, Sunflower, Cotton and Sugarcane represent more efficient utilization of Indian domestic resources than production of Sunflower, Sugarcane and Groundnut. Rice occupies 23% of total cropped area. Sugar cane competes with rice. RCR is below unity in rice producing states (Gulati and Kelley: 99). The cost of export of rice is less than one rupee in Andhra Pradesh and Punjab (Andhra Pradesh, Punjab, Haryana are

surplus states in production of rice.) It costs 0.70 a rupee to earn a rupee worth of foreign exchange through production and export of rice. Cotton is a major commercial crop. RCR in five states is low, (below unity) in Karnataka, Maharastra, there is low RCR. Pigeon-pea occupies third rank. The crop has low RCR in four states. Gujarat, Madhya Pradesh, UP produce the crop. Gujarat has the lowest RCR. Surghum is produced in four states such as Andhra, Maharashtra, and Madhya Pradesh. Madhya Pradesh has the lowest RCR. It has the distinction of cultivation of Soybean. Maize is produced in states such as M.P., Rajasthan. Madhya Pradesh having low RCR. For pearl millet RCR for Rajasthan is greater than Gujarat. Maharashtra and Karnataka are two sunflower producing states. Sugarcane is highly water intensive crop. U.P., Haryana, Andhra Pradesh experience high social cost. Groundnut is produced in six states. Tamilnadu has low RCR.

III. EXPORT PERFORMANCE RATIO

The EPR (Export Performance Ratio) also evaluates comparative advantage based on observed pattern of trade.

$$EPRi = \frac{Ei/CE}{Wi/WE}$$

Ei = Export of i^{th} commodity from the country

CE = Agg Export in reference year

Wi = Total world Export

WE = World Export in reference year.

Porter (1990) in his theory of comparative advantage suggested that in international trade the focus should be beyond comparative advantage to the notion of competitive advantage. Export Competition of agricultural commodity has been assumed by computing nominal protection coefficient (NPC). NPC is the ratio of domestic producer price of i^{th} commodity to its border price

$$NPCi = \frac{Pi^{d}}{Pi^{b}}$$

If NPC is less then 1 it indicates that the country has competitive advantage. EPR study has been made by Jha (2001). It focuses on determining the comparative advantage for horticulture and commercial

crops (1985-97). The study clearly shows that competitive advantage revealed by EPR has declined for all fruits and vegetables between 1983 and 1997 and products like grapes, tomatoes, banana, pears, pineapple, mango have also a bright future like litchis. Jharkand has high export viability of litchis in future provided infrastructure support like better transport facility, credit facility, marketing facility, and Govt. assistance are provided. Grapes have been a foreign exchange earner to the tune of 524.8 million.

IV. CONCLUSION

The decline in agriexport earning starting from 1997 has been attributed to South East Asian Crisis. It is experienced that if Japan catches cold entire Asia sneezes. The crises led to decrease in agricultural price (Bhalla-2004: 49:51). India is of course a marginal player in world market. It is high time for the government to provide an incentive for agricultural product and market development assistance. The competitiveness is dependent on export price, which is closely related to cost of production. The major determinants of cost are price of input like labour skill, and equipment necessary for agriexport. The pressure of domestic demand squeezes the surplus available for exports and worsens the price competitiveness of export (Nayar: 87). The income elasticity of demand for most exportable is quite high in the domestic market. The non-price factors like quality and marketing have an important bearing on export performance. There is no maintenance of quantity control in India. It is estimated that every one per cent swing in the term of trade in favour of agriculture will result in diversion of 8,500 crores of rupees annually in favour of agriculture from non-agricultural sector. The additional rural purchasing power will create a phenomenal effective demand. Promotion of agricultural export is important for creating conditions for providing remunerative price to farm products. More encouragement should be given to those agricultural products, which have the greatest positive impact on agri-exports. These commodities should have high share in total agri-export and imply that the commodity has high influence in exports and the commodity has good potential in world market; and certain amount of stability over the years. (Sathe and Despande: 2006).

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Indian Agriculture : Post Reform Impasse and Policy Implications

Dr. Satyabrata Mishra
Deptt. of Economics
M.P.C. (A) College,
Takhatpur, Baripada

Introduction :

With impressive performance during the 80's the agriculture sector slackened its pace in the 90's. Despite favourable weather, crop diversification from cereals to oil seed, cotton and other cash crops did not increase. Agricultural growth decelerated in major states and in some of the poorer ones per capita growth was negative corresponding to Malthusian spectre which is still haunting the agrarian sector.

There is diminution in public investment on irrigation since the early 80's. Agricultural profitability declined by 14.2% through the decade of economic reforms. Earlier agricultural fixed capital formation in the private sector was rising although it had collapsed in public sector. But in the last few years, private sector investment in agriculture had collapsed although there is some revival in public investment. Decline in profitability coterminous with cost escalation of new profitable technologies and a degree of uncertainty implied that farmers had to bear tremendous risk in profitable agriculture. The failure of the state to grasp and ameliorate this led to vulnerability, pauperization and great misery including suicides among several farmers. Growth of inputs declined. The first half of 90's was a period of explosive growth of agricultural trade. Import growth outstripped export growth. In the second half substantial import growth continued. Exports collapsed.

The present paper makes an ingenious attempt to study.

(i) the growth rates of agricultural production in India during pre-reform and post-reform period.

(ii) to visualize the annual average growth rate / overall GDP growth rate and Agriculture and allied sectors during pre and post reform period and to make international comparison of yield of selected

commodities and item wise production during 9th and 10th plan period.

(iii) to analyse the loopholes in the new agricultural strategy and the imperativeness of second phase of green revolution in India and finally.

(iv) to suggest policy measures for revitalizing Indian agriculture.

The present study is based on secondary data.

Impact of Economic Reforms on Indian Agriculture :

The fundamental lacuna of economic reforms is the utter neglect of agriculture. Food grain production increased from 129.6 million tonnes in 1980-81 to 176.4 mt in 1990-91 registering an annual compound growth rate of 3.1%. But during post reform period (1990-91 to 2003-04) foodgrain production increased from 176.4 MT. to 212 MT. registering only 1.4% annual compound growth rate. Growth rates of agricultural production in India during pre reform and post reform period has been mentioned in the below table.

TABLE NO.- 1

ITEM		Pre-reform period (1980-81 to 1990-91)	Post reform period (1990-91 to 2003-04)
	1	2	3
1.	Food grains	3.1	1.40
	a. Rice	3.3	1.06
	b. Wheat	4.3	2.10
	c. Coarse Cereals	1.2	1.20
	d. Pulses	3.0	0.36
2.	Oil Seeds	7.1	1.98
3.	Sugarcane	4.6	1.47
4.	Cotton	3.4	2.68
5.	Jute and Mesta	1.2	0.52
6.	Index of Agricultural Production	3.8	1.54

Source : Economic Survey 2005-06

Irrigation is the basic input which helps the optimum utilization of other inputs– seeds and fertilizers, the declining trend is observed in respect of growth rate of irrigated areas under rice and wheat from 70's to 80's to 90's. In case of pulses irrigated area growth experienced a negative growth rate of 1.5% per annum. A similar trend was observed in the case of extension of area under HYV in case of paddy and rice. Fertilizer consumption declined from 8.5% to 3.7%. Major irrigation acts as a supplement to minor irrigation in keeping the water table high while minor irrigation provides water security to the peasant in case of failure of rains. The slackening of growth rate of irrigated area under minor irrigation from 3.5% during 80's to 2.3% during 90's is one fundamental factor contributing to slow down of overall agricultural growth. Economic reforms did not pay adequate attention to expansion of irrigation and this growth of agricultural production during 90's neglected agriculture and consequently growth rate of agricultural production which was 3.8% during 80's declined to 1.54% during 1990-91 to 2003-04. Although 9th FYP fixed a target of 4.5% for annual growth in agriculture but the actual achievement of GDP growth in agriculture during 1997-2002 was 2.0% per annum i.e. only 44% of the target.

Various reasons can be attributed to sluggish agricultural growth rate. Firstly the reform process has emphasized the growth of manufacturing and service sectors and thus neglected agriculture. Secondly as per Economic Survey 2004-05 gross capital formation in agriculture indicated that public sector investment at 1993-94 prices indicated diminution from Rs.4967 cr. in 1994-95 to Rs.4359 cr. in 2002-03 i.e. 12.3% decline. This reduction in public investment in agriculture including rural development and irrigation adversely affected foodgrain production. Thirdly NABARD accumulated Rs.13,500 cr. but under its RIDF (Rural Infrastructure Development Fund) utilized only 30% exhibiting dismal performance. This lack of development of irrigation infrastructure by withdrawing public sector investment anticipating that private sector investment will expand irrigation did not materialize. According to Economic Survey 1999-2000, the decline in public investment in agriculture is mainly due to the diversion of resources into current expenditure in the form of subsidies for food, fertilizers, electricity irrigation, credit and other agricultural inputs rather than on creation of assets.

Though India has seven good monsoon years in succession, agricultural production indicated year to year fluctuation. This casts a shadow on sustainability of agricultural growth unless there is a reorientation of priorities with much greater emphasis on agriculture and rural industrialisation. The state instead of withdrawing from investment in agriculture, irrigation and rural infrastructure has to strengthen public sector investment in these areas.

Share of Indian agriculture in India's GDP at F.C. declined from 44.5% in 1970-71 to 30.9 in 1990-91 to 23.0% in 2004-05. Pattern of Govt. outlay on agriculture during plan period reveals that it has declined from 31% in first plan to 22% in seventh plan to 20% both in 9th and 10th FYP. Comparison between overall GDP growth rate and Agriculture and allied sector growth rate from 7th to 10th FYP has been mentioned in the table below.

TABLE NO.- 2

FYP	GDP Growth Rate	Agriculture and Allied Sector
7th Plan (1985-1990)	6.0	3.2
8th Plan (1992-1997)	6.7	4.7
9th Plan (1997-2002)	5.5	2.1
10th Plan (2002-07)	7.6	2.3
2002-03	3.8	–7.2
2003-04	8.5	10.0
2004-05	7.5	0.0
2005-06	9.0	6.0
2006-07	9.2	2.7

Source : Govt. of India Economic Survey 2005-06, 2006-07

N.B. : Growth rates prior to 2001 based on 1993-94 prices and from 2000-01 onwards based on new series 1999-2000 prices, CSO.

Agriculture sector growth rate was perceptible during 8th plan but declined to 2.1% during 9th Plan, decelerated to –7.2% at the commencement of 10th Plan, negligible only in 2004-05 but improved to 2.7% in 2006-07. Low productivity has afflicted growth of Indian agriculture.

International comparison of yield of selected commodities in 2004-05 reveals that in paddy India's yield rate is 29 qtl. per hectare whereas it is 98 qtl. in Egypt, 64 qtl. in Japan, 78 qtl. in USA and 24 qtl. in Myanmar as against world average of 39.6 qtl. Though India accounted for 21.8% of global paddy production but the yield rate is less than one third of Egypt which has the highest yield rate in 2004-05. India accounting for 12% of global wheat production but one third of. UK's yield rate in 2004-05. In wheat production India's yield rate is 27.1 qtl. as against 77.7 qtl. in UK, 75.8 qtl. in France and 42.5 qtl. in China. In sugarcane production India's yield rate is 680.49 qtl. as against 1198.93 qtl. in Egypt, 947.89 qtl. in Colombia, 940.32 qtl. in Guatemala. However India's yield rate exceeds global average in sugarcane.

Low agricultural productivity can be attributed to erratic monsoon flow, limited use of new agricultural technology, declining public sector investment, failure of land reforms, growing exploitation of the tenants and failure to combat burgeoning growth of population.

Declining public sector investment in agriculture has been reflected in the table below.

TABLE NO.- 3

Year	Public	Private	Total	% of Share of	
				Public	Private
1980-81	1800	2840	4640	39	61
1990-91	4400	10440	14840	30	70
2000-01	3930	12980	16910	23	77
2003-04	5250	15260	20510	26	74

Source : Economic Survey Govt. of India, 1998-99, 2004-05

Public sector investment in agriculture declined from 39% in 1980-81 to 30% in 1990-91 to 23% in 2000-01, but improved marginally to 26%. Thus in the post reform period the share of public sector investment in agriculture has declined relative to pre reform period. Improvement in private sector investment has not substantially augmented agricultural productivity.

The share of agriculture sector's capital formation in GDP declined from 1.92% in the early 1990's to 1.28% in the early 2000's. This diminution can be attributed to stagnation in public investment in

agriculture since the middle 1990s. However it has increased marginally to 1.31% in 2003-04 when public sector investment in agriculture increased to Rs.5250 cr. i.e. 26% of the total investment in agriculture.

Loopholes in New Agricultural Strategy :

a) **Indian Agriculture still a Gamble in the Monsoons :**

b) **Growth of Capitalistic Farming in Indian Agriculture :** The new agricultural strategy consisting of IADP and HYVP necessitated heavy investment in seeds, fertilizers, pesticides and water. These lumpsum investments are beyond the capacity of small and medium farmers. In India there are about 81 million farm households but only 6% of the big farmers account for 40% of the land. The big farmers alone make heavy investment in the installation of tubewells, pumping sets, fertilizers and agricultural equipment etc. consequently the new agricultural strategy has helped the growth of capitalist farming in India and led to concentration of wealth in the hands of top 10% of the rural population.

c) **Side tracking the need for institutional reforms in Indian agriculture :** The new agricultural strategy does not recognize the need for institutional reforms in agriculture. The bulk of peasant population does not enjoy ownership rights. Large scale evictions have already taken place. As a result the tenants are being forced to accept the position of share croppers.

d) **Widening disparities in income :** Technological changes in agriculture have adverse effects on the distribution of income in rural areas. As aptly remarked by C.H. Hanumanta Rao, technological changes have contributed to widening the disparities in income between different regions, between small and large farms and between land owners on the one hand and landless labourers and tenants on the other. In absolute terms the gains from technological change have been shared by all sections. This is indicated by the rise in real wages and employment and in income of technological change.

e) **Problems of labour displacement :** Mechanised agriculture in the garb of green revolution caused displacement of labour.

Biological innovations are labour absorbing but mechanical innovations are labour saving. It is the net effect of labour absorbing and labour saving innovations that determine the extent to which mechanization needs to be introduced to check further displacement of labour. Since mechanization may dampen the increase in labour demand, resulting from the expanding fact of seed-fertilizers, the policies that encourage premature mechanization in surplus labour economies such as India's, do not seem to be conducive to solving the problem of growing unemployment.

The Economic Survey 2006-07 pointing out the weakness of Indian agriculture observed. 'The structural weakness of the agriculture sector reflected in low level of public investment, exhaustion of the yield potential of new high yielding varieties of wheat and rice, unbalanced fertilizer use, low seeds replacement rate, inadequate incentive system and post harvest value additions which were manifest in the lacklusture agricultural growth during the new millennium.'

Further the Economic Survey observes, the urgent need for taking agriculture to a higher trajectory of 4% annual growth can be met only with improvement in the scale as well as quality of agricultural reforms undertaken by the various states and agencies at various level. These reforms must aim at efficient use of resources and conservation of soil, water and ecology on a sustainable basis and in a holistic framework. Such a holistic frame work must incorporate financing of rural infrastructure such as water, roads and power.

New Thrust Areas in Agriculture :

In the interest of agricultural growth with emphasis on sustainability and equity major thrust areas are mentioned below.

a) **Output and area under Coarse Cereals has shown negligible improvement :** Neither area nor production of coarse cereals showed any significant improvement. Sufficient attention was not paid to develop better HYV strains of these crops. Since major inputs were directed towards wheat and rice, coarse cereals remained neglected and to improve these production should be a major thrust area.

b) **Stagnation in the output of pulses :** Production of pulses has been stagnant at 12-14 MT from 1970-71 to 1990-91 and per capita consumption of pulses declined from 69 gm. in 1971 to 37 gm. in 2004. Agricultural researches have devised new varieties of pigeon-pea (Arhar) which is ideally suited for poor farmers and it is possible to produce 2 to 3 tonnes per hect. Both Arhar and gram taken together account for 60% of total production of pulses. There is considerable scope for making a break through in the productivity of pulses.

c) **To boost the production of edible oils :** India is not self reliant in the production of edible oil. The major oilseeds grown in India are groundnuts, rape seed, mustard, sunflower, soybeans etc. The major problem is low productivity of oil seeds per hect. yield rate is low compared to China and other developing countries. Import of edible oil has gone up to Rs.1000 crore in a year during 80's and increased to Rs.11680 cr. in 2003-04. Govt. of India has set up Technology mission on oilseeds with the proposed target of augmenting oilseed productivity to 40 MT by 2010.

d) **New Strategies of Irrigation and Water Management :** About 90% of water available is allocated to irrigation which is wasteful use of water. It would be useful to develop irrigation strategies which economise water use. The target should be to reduce water use for irrigation to 77% of total available water in the next 10 to 12 years to cater to the rising demand for water for industrial and municipal needs. The new strategy of irrigation should be directed towards the following :

(i) Control and proper method of irrigation in canal and tank command areas, specifically for paddy.

(ii) Repair and maintain the traditional system of water harvesting and recharge of surface water.

(iii) Introducing drip irrigation in well irrigated areas.

(iv) Training farmers and extension officers in water management.

e) **Use of bio-fertilizers has to be expanded :** Researchers in bio-technology and genetic engineering have demonstrated that certain micro organisms such as bacteria and blue green algae can act as nitrogen fixers and provide nutrient to crop plants. The most commonly used bio-fertilizer is Rhizobium which colonizes the roots of specific legumes to form root nodules which act as factors of ammonia production. The Rhizobium legume association can fix 100-300 kg. of nitrogen per hect. in one crop season and even leave substantial quantities of nitrogen for the next crop. The great break through in nitrogen generation by micro organism is a great advance in agricultural research that promises a second green revolution.

f) **Emphasis on dry farming :** Out of total cultivated area of 163 million hect. in India dry land farming is carried on in 100 million hect. i.e. in 60% of the total available land. But the contribution of dry land farming to agricultural production is less than 30%. About two thirds of dryland farmers own less than two hect. and even this is available in scattered and fragmented holdings. Since the country has to carry on with dry land farming for many years to come, it is imperative that dry farming technology be developed so that the possibilities of raising the potential output of vast dry land areas be exploited. For this purpose problems of different dryland areas have to be studied and region specific technology have to be developed. Moderate use of fertilizers, improved seeds and better conservation of rain water and its judicious use can contribute to 40% to 50% increase in yields in rain fed areas.

Need for Second Phase of Green Revolution :

Technological fatigue contributes to stagnation in agricultural productivity. It has been observed that high yielding varieties have reached a plateau and the scope for future increase in production appears to be very limited. The seed-water fertilizer technology has probably exhausted its potential and now at a point of diminishing return. The sceptics believe that traditional green revolution breeding techniques have come to a dead end. Whatever success has been achieved in rice

is the consequence of extending the pioneering varieties to more and more area so that the country can realize the potential. As stated by Harish Damodaran, even with the current high yielding varieties it is possible for farmers in the Indo-Gangetic plain, which accounts for 18 million hect. out of 26 million hect. under wheat to produce an additional 25 mt. of wheat by adopting improved crop management practices and ensuring timely supply of inputs, attractive prices and so on. An half a tonne increase in average per hect. rice yield can similarly generate an additional 20 MT from the country's 42 MT odd hect. area planted over paddy. It would be possible to have an additional 45 MT of rice and wheat by 2007-08 provided concerted efforts are made. Since the additional seed costs for hybrid seed are of the order of Rs.1,500 per hect. the yield gain has not been enough to translate into substantially higher returns to the farmers. Consequently the farmers have not been encouraged about the use of hybrid rice. Agricultural scientists have the concerted efforts to bring down the seed cost by standardizing hybrid rice seed production techniques. Govt. should also provide hybrid rice seed at subsidized rates to farmers. Rice Research Institutes should have their efforts to take care of problems of hybrid seeds. The hybrid technology in wheat is still at an infant stage of development and research efforts shall have to be a breakthrough in the yield barrier. The further prospects of the next phase of the Green Revolution lie in hybrid seed technology.

Policy Implications :

National Agricultural Policy 2000 stated that capital inadequacy, lack of infrastructural support and demand side constraints such as control on movement, storage and sale of agricultural products etc. have continued to effect the economic viability of agriculture sector. Consequently growth has also tended to slacken during the nineties. NAP emphasizes on sustainable agriculture with thrust on (a) increasing cropping intensity through multi cropping and inter cropping, (b) to vigorously pursue a long term perspective plan for sustainable rainfed agriculture through watershed approach for development of two-third of India's cropped area dependent on rains, (c) rational use of surface and ground water so that the receding ground water level in certain areas due to over exploitation of available water resources can be

checked. To use better technologies like drip and sprinkler irrigation system to make more economic and efficient use of water, (d) involvement of farmers and landless labourers will be sought in the development of pastures / forestry programmes on public waste land by giving financial incentives and entitlement of trees and pastures.

The approach paper to the Eleventh Plan has highlighted a holistic framework and suggest the strategy to raise agricultural output : (a) doubling the rate of growth of irrigated area (b) improving water management, rain water harvesting and watershed development (c) reclaiming degraded land and focusing on soil quality, (d) bridging the knowledge gap through effective extension (e) diversifying into high value output fruits, vegetables, flowers, herbs, spices etc. with adequate measure to ensure food security, (f) promoting animal husbandry and fishery, (g) providing easy access to credit at affordable rates and (b) refocussing on land reforms issues.

Outlining the above 8 points strategy for realizing second green revolution Prime Minister, Dr. Manmohan Singh observed that there was a need to improve farm management practices to enhance productivity. This also requires improvement in soil, water conservation, credit delivery system and application of science to animal husbandry to achieve the second green revolution.

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Post Reform Agri-exports of India Challenges Ahead

Dr. Minati Mallick
Dr. Jagannath Lenka
North Orissa University

I. Introduction

India has proved to be a very conservative player in the world market for agri-products since independence. Because of the importance of agriculture in providing a source of livelihood for nearly eighty per cent of its poverty population, the country has dared not to open up its agricultural sector to world market thereby controlling its external vulnerability. Though export pessimism with respect to agricultural exports is still prevalent the importance of trade in agricultural commodities seems to have declined further after the economic reforms in 1991 and inclusion of agriculture in WTO in 1995 India had visualized the opportunities in liberalizing agri-trade as it has felt the existence of comparative cost advantage in production of some crops in terms of weather conditions and lower labour costs. Therefore, India opened up its agricultural sector and introduced different policy measures to remove quantitative restrictions on agricultural imports, converting non-tariff barriers to tariff barriers and withdraw export incentive schemes on a large scale. This has posed a greater challenge before the agri-export sector of the country.

The present paper that attempts to study the challenges that the agri export sector faces is organized in the following manner. Section II makes an analysis of growth of agri trade since economic reforms. The relative performance of agri export sector is analysed in Section III. The causes of slow growth in agri exports are presented in Section IV followed by the concluding section.

II. Growth of Agricultural Trade in Post Reform Period

India's economic reforms with excessive focus on industrial and trade policies, no doubt, neglected the agricultural sector but created favorable conditions for growth of its export market through the trade policy reforms and devaluation of rupee. In its recent trade policy, government of India has set an annual export target of US dollar 300

billion by 2009. The policy focuses on agricultural exports with an emphasis on employment generation.

Table-I represents the trade in agricultural exports and imports in India for the period of 1991-92 to 2003-04. As the table shows the agricultural exports were to the extent of about 18 per cent of the total exports from India in 1991-92. It increased to 20.33 per cent in 1996-97 after which it declined continuously to about 13 per cent in 2003-04 though it has increased in absolute terms from Rs.7838 crore in 1991-92 to 36893.9 crore in 2003-04. The compound growth rate of agricultural exports was 13.01 per cent per annum as against 16.10 per cent growth rate of total national exports in post reforms period. On the other hand, in post reforms period the agricultural imports have increased from Rs.1478.27 crore in 1991-92 to Rs.21894 crore in 2003-04. The per centage share of the agricultural imports in total national imports has increased from 3 per cent to 6 per cent over the study period. Moreover; the compound growth rate of agriculture imports is higher i.e. 23.18 per cent as compared to that of 17.11 per cent of total national imports. Though in absolute terms our agricultural exports are higher than agricultural imports, it lags behind the imports so far as the compound growth rates are concerned.

TABLE-1

Agricultural Exports and Imports in India

(Rs. in Crore)

Year	Agricultural Export	Total Export	Per cent of Agri-export to Total Export	Agricultural Import	Total Import	Per cent of Agri-import to Total Import
1991-92	7838.04	44041.81	17.8	1478.27	47850.84	3.09
1992-93	9040.30	53688.26	16.84	2576.25	63374.52	4.54
1993-94	12586.55	69748.85	18.05	2327.33	73101.01	3.18
1994-95	13222.76	82673.40	15.99	5937.21	89970.70	6.60
1995-96	20397.74	106353.35	19.18	5890.10	122678.14	4.80
1996-97	24161.29	118817.32	20.33	6612.60	138919.88	4.76
1997-98	24832.45	130100.64	19.09	8784.19	154176.29	5.70

1998-99	25510.64	139751.77	18.25	14566.48	178331.69	8.17
1999-00	25313.66	159095.20	15.91	16066.73	215528.53	7.45
2000-01	28657.37	201356.45	14.23	12086.23	228306.64	5.29
2001-02	29728.61	209017.97	14.22	16256.61	245199.72	6.63
2902-03	34653.94	259137.28	13.58	17608.83	297205.87	5.92
2003-04	36893.90	291581.93	12.65	21894.37	353975.61	6.19
CGR	13.01	16.10		23.18	17.11	

Source: Govt. of India, 2004

Agri-exports as a share of total exports fall in the range of 13 per cent to 20 per cent that seem to decline over the period mainly after 1996-97 while agri imports fall within a range of 3 to 8 per cent that appear to have increased over the said period. Thus, agri exports were having utmost importance at the beginning of liberalization period and continue to do so though their importance as compared to that of agri imports seem to have eroded somewhat in later years. In terms of their impact on balance of trade, so on balance of payments situation, agri imports have a small but rising impact for the time period considered. Of course the share of agri imports shows a cyclical pattern. It was very high around 25 per cent in 1960 that declined steeply since mid 1970s when India acquired higher levels of food grain self sufficiency. Again, the share shows a gradually rising trend during 1990s and early part of the 21st century. On the other hand, the share of agri exports in the total exports was very high around 40 per cent earlier which declined over the years to have a share of only 13 per cent in 2003-04. A relatively sharp fall in share of agri exports in total exports coupled with a rise in the share of agri imports in total imports is leading to a fall in their import on the external sector of the economy in spite of relative liberalization of the agri-trade sector in the post reform era.

III. Share of India's Agri-Trade in World's Agri-Trade

Table-2 represents the share of India's agri-trade in world's agri-trade. The country's agri exports in dollar terms went on rising up to 1996 after which it declined in absolute terms again to start rising, though marginally, after 2002. This behaviour, not captured by rupee data, can be attributed to the South-East Asian crisis, slow down in the world economy and decrease in the agricultural prices. The share of India's agri exports in the world's agri exports has also increased from 0.94

per cent in 1990 to 1.17 per cent in 2004. The same is the case for agri imports. In absolute tends as well as in terms of its share in the world's agri-imports it has shown a rising trend. However, India's agri exports and agri imports are rising at faster rate (6.08 and 13.54 per cent respectively) as against the rate of growth of World's agri-exports and imports. However, when compared, the lower share of the country's agri export than that of agri imports clearly depicts the stiff competition the sector is facing in the world market.

TABLE-2

Share of India's Agri-Trade in World's Agri-Trade

(In Billion Dollar)

Year	India's Agri Exports	India's Agri Imports	World's Agri Exports	World's Agri Imports
1990	3.07(0.94)	1.08(0.31)	326.23	352.73
1991	2.80(0.85)	0.74(0.21)	329.22	354.32
1992	2.95(0.82)	1.35(0.35)	357.98	387.63
1993	3.36(0.99)	1.04(0.29)	339.28	356.60
1994	3.24(0.83)	2.20(0.54)	389.00	404.65
1995	5.49(1.24)	2.22(0.48)	443.47	462.67
1996	5.85(1.26)	2.21(0.46)	465.80	480.53
1997	5.66(1.24)	2.58(0.55)	457.88	468.88
1998	5.23(1.99)	3.839(0.84)	438.24	457.51
1999	4.64(1.11)	3.97(0.89)	417.20	443.54
2000	4.95(1.20)	2.88(0.66)	412.00	434.92
2001	5.23(1.27)	3.92(0.89)	413.64	439.40
2002	5.52(1.25)	4.02(0.87)	442.29	464.62
2003	6.50(1.24)	4.90(0.89)	523.88	550.13
2004	7.05(1.17)	5.11(0.81)	604.33	634.51
CGR	6.08	13.54	3.25	3.15

The numbers in parentheses in second and third columns indicate the share in world agri-exports and imports respectively.

Source: FAO of United Nations Trade And Commerce Year Book, Various Issues.

Thus, even in the post WTO regime agricultural exports have not shown any dynamism following liberalization. The response is dismal. The agro products like marine products, cashew, tea, basmati rice, spices, oil meals, coffee, non-basmati rice and castor oil constitute 74 per cent of total exports of agriculture and allied products. The export of these items has declined to approximately 3 per cent during 1996-2000. The export of non-basmati rice, oil meals and coffee has recorded the decline from 8.5 per cent to 2.7 per cent during this period. These items enjoyed substantial increase in their exports during the first half of 1990s but by the end of the period considered their exports have declined. The overall exports of agro products are having a declining trend. There are sufficient grounds to conclude that the WTO has helped developed countries in using several trade and non-trade barriers weakening the market access for developing countries like India.

IV. Causes of Slow Growth of Agri Exports of India

Low productivity, illiterate farmers and lack of adequate marketing infrastructure are main causes of slow growth of agri exports in India. The country has lower productivity as compared to world productivity in many crops like paddy, maize, pulses rapeseeds etc. The country also lacks adequate marketing infrastructure, storage and warehousing facilities in rural areas. This is coupled with inadequate availability of institutional credit at a cheaper rate to the farmers. The prevalence of illiteracy among farmers has made them less exposed to modem technology, post harvest management techniques and marketing opportunities. All these have accounted for the country's inability to generate sufficient export surplus both quantitatively and qualitatively.

So far as the quality is concerned most of the Indian farm products do not conform to the world standard because of the sanitary and phyto sanitary restrictions and processing and packaging specifications. It appears in the press from time to time about the rejection of our rice and wheat even by developing countries. India has to improve the processing and packaging techniques to maintain the international standards.

Lack of knowledge about international laws among farmers keeps them in a disadvantageous position in global trading. The Shrimp/ Turtle case of June 2001 which went against India, Malaysia, Pakistan and

Thailand is the best example where America defeated these countries because of its greater knowledge about international law.

India is very slow in clearing the customs and port congestions that leads to unnecessary wastage of time and increased transport cost.

V. Major Findings, Suggestions and Conclusion

The main findings that emerge from the above study relating to trend in agricultural exports and its share in world agritrade are as follows :

- Following reforms and liberalization, the agriexports have increased from Rs.7837.04 crore in 1991-92 to Rs.36893.90 crore in 2003-04.
- The share of agri exports in total exports of the country falls in the range of 10 to 16 per cent The data show that this share has decreased over the period from 17 per cent in 1991 to 12.65 per cent in 2003-04 .the decreasing trend can be attributed to the negligence of the sector by the economic reforms and the causes cited previously.
- The annual compound growth rate of agri exports is found to be 13 per cent as against that of agri imports which is 23 per cent. This has reduced the trade gap and reflects the intensity of competition that the sector is facing in the world market.
- The share of India's agri exports in world agri exports though improving gradually the pace of growth is very slow. Still it accounts for only 1 per cent of the world agri exports.
- Thus, it may be construed that a comparatively higher increase in the share of import affected agriculture in the agri GDP than that of export-oriented agriculture has adversely affected the domestic agriculture in post reform era.
- The gloomy scene of Indian agri exports can be brightened up through the development of an integrated, vibrant and dynamic marketing system. Diversification of agriculture directed towards high value non-traditional products like fruits, vegetables, spices, flowers and marine products can be a welcoming step.

- Training and extension education for farmers can help them in acquiring information about the world demand and maintaining export quality of their product.
- Modernization of agri product processing will also enhance our export market potential.
- In face of declining public investment, private investment need be encouraged in the field of infrastructure in agriculture.
- The high-income countries should be forced to open up their markets by reducing their agricultural subsidies. India also requires sufficient knowledge about international law so that it can fight for its genuine right against those countries.

There is little doubt that India can reap rich returns from the agri trade liberalization provided it carries out large-scale reforms in its agricultural marketing system. It needs an open but defensive marketing policy to make its agriculture more competitive so as to face the challenges ahead.

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Agricultural Production in Orissa A Trend Analysis of Pre and Post Reform Period

Dr. Sandhya Rani Das
Department of Economics,
Berhampur University,
Berhampur (Orissa).

Dr. Purushottam Sahu
Department of Economics,
Gopalpur College,
Gopalpur-on-Sea,
Ganjam, Orissa

1. INTRODUCTION

Orissa with a population of 367 lakhs in the northern part of east coast of India is a backward state in the country. It is primarily an agricultural economy, where about 85 per cent of people live in rural areas depending on agriculture directly or indirectly. During the last fifty years of planned development, no doubt, the state has made some progress, but it could not keep pace with the accelerated growth of other states in the country.

Development of agriculture seems to hold the key to the progress of the state's economy and should receive due emphasis. Increased agricultural income creates market demand for industrial consumer good, thereby providing a stimulus to industrialisation and market development. Along with the slow development of agriculture, the industrial sector of the state has also not developed compared to the other states of India. Recognising the importance of this sector to the state's economy, the present paper is an attempt to study the growth trend of agricultural production in Orissa of pre-and post-reform period.

2. LAND UTILISATION PATTERN

The net sown area indicates the agricultural activity of a region. In Orissa, net area sown has been fluctuating from year to year. It depends mainly on the availability of water through rain or different irrigation facility. Floods also damage land ana crop, and reduce net area sown. Increased land area put to non-agricultural purposes also reduces the net sown area. The land utilisation pattern in Orissa from 1996-97 to 2003-04 is presented in Table-l.

TABLE-1 :

Pattern of Land Utilisation in Orissa

(Area in '000 hectares)

Year	Land put to Non-agricultural use	Barren & un- cultivable Land	Fallow Land	Net area Sown
1996-97	858	570	826	5968
1997-98	866	590	632	6122
1998-99	866	590	708	6048
1999-00	838	618	681	6075
2000-01	999	843	770	5829
2001-02	999	843	754	5680
2002-03	999	843	919	5680
2003-04	999	843	919	5680

Source : Statistical Abstract of Orissa, 2005

3. CROPPING INTENSITY

Cropping intensity measures the level of development of agriculture. The net sown area, gross sown area and cropping intensity from the year 1990-91 to 2003-04 are presented in Table-2. It can be verified from the table that the cropping intensity has been declining gradually, being the lowest, 138 per cent during 1998-99.

TABLE-2 :

Cropping Intensity in Orissa

(Figures in Thousand Hectares)

Year	Net Sown Area	Gross Cropped Area	Cropping Intensity (%)
1990-91	6304	9642	153
1991-92	6337	9822	155
1992-93	6304	9416	149
1993-94	6303	10032	159

1994-95	6279	9691	154
1995-96	6201	9668	156
1996-97	5968	8216	138
1997-98	6122	8645	141
1998-99	6048	8425	139
1999-00	6075	8524	140
2000-01	5829	7878	135
2001-02	5845	8798	151
2002-03	5680	7853	138
2003-04	5796	8637	149

Source : Statistical Abstract of Orissa 1990 to 2005

4. CROPPING PATTERN

Table-3 presents data on cropping pattern of principal crops in the state from 1991-92 to 2003-04.

TABLE-3 :

Cropping Pattern of Principal Crops in Orissa

(Figures in Per cent)

	Rice	Cereals	Pulses	Oil Seeds	Fibers	Other Crops
1991-92	70.8	73.98	15.1	7.5	0.9	2.3
1992-93	70.09	74.8	14.4	7.7	0.7	2.4
1993-94	71.3	75.2	14.2	7.7	0.7	2.2
1994-95	70.8	74.4	14.8	7.4	1.0	2.4
1995-96	71.8	75.0	14.2	7.3	1.0	2.5
1996-97	75.7	79.6	10.6	6.9	1.2	1.7
1997-98	74.9	77.6	12.2	7.0	1.2	1.6
1998-99	76.4	79.8	11.8	6.4	1.4	3.0
1999-00	77.5	81.1	10.9	5.6	1.4	2.3
2000-01	76.2	79.5	9.7	5.9	1.8	1.9
2001-02	77.7	80.8	11.4	5.5	1.3	1.8
2002-03	76.4	79.3	10.9	4.9	1.3	2.1

Source : Director of Economics and Statistics, Bhubaneswar

In Orissa more than 70 per cent cultivated area is covered under paddy crop. Since the Eighth Plan, efforts are being made to divert land from paddy to cash crops like pulses, oil seeds, sugarcane, potato, and tobacco etc. to ensure better returns from agriculture. The table shows that during 2003-04, paddy was the major cereal crop in the state with a coverage of about 76.4 per cent of total gross cropped area under principal crops, followed by pulses (12.2%) and oil seeds (5.2%). The area under fibre crops accounts for only 1.3% and other cash crops, which include sugarcane, potato etc. constituted only 2% of gross cropped area. The per centage of area under pulses and foodgrains has increased in 2003-04 while that of cereals, oil seeds, and fibres have declined.

5.0 TREND ANALYSIS OF AGRICULTURAL PRODUCTION

An attempt has been made here to study the trends of growth of area and production of the foodgrains and commercial crops produced in the state during the last 20 year period from 1982-83 to 2002-03.

5.1 Cereals

Agricultural production can broadly be classified into two components (a) production of foodgrains and (b) production of non-foodgrains. The foodgrains form a major proportion of agricultural production in Orissa. Again, of foodgrains, rice is a major crop. The other cereals produced in the state are jowar, bajra, ragi and wheat.

During 2001-02 there was a record production of 75.40 lakh MT, of foodgrains comprising a bumper production of rice of 71.49 lakh MT. But during 2002-03, the agricultural sector received a major setback due to severe drought in the state. The July rainfall that year declined by 60% which was the lowest during the last 40 years. The prospects of rabi crop also became bleak due to the failure of rains during October and November. All these factors had seriously affected foodgrain production, which declined to very low level of 35.55 lakh M.T. in 2002-03 as against 75.40 lakh M.T. during the previous year. Foodgrains production during 2003-04 has been doubled in comparison to the previous year.

The area under cultivation of cereals which was 51.83 lakh M.T. in the year 1980-81 came down to 44.43 lakh M.T. by the year 2002-03, a reduction of 14.26 per cent in 22 years, that is, on an annual average of 0.65 per cent. The linear trend in area of cultivation of

cereals remained negative, with a slope of –21.565. On the other hand, production of cereals showed improvement in growth rate of 35.02 per cent with an average annual growth of 1.60 per cent in the same period. The positive linear trend of production remained 38.57 during the period.

5.2 Pulses

Next to cereals, pulses form an important foodgrains in Orissa. Pulses include *mung, biri, kulthi,* etc. The total area under pulses was 1437 thousand hectares in 1982-83; it declined to 549 thousand hectares in 2002-03, a reduction of 61.79 per cent implying an annual average growth rate of 3 per cent in the twenty-year period. The linear trend value is negative with a slope of –74.43 during the period. Similarly, the production of pulses witnessed a reduction of 70.12 per cent during the study period. The trend is also negative herewith a slope of –51.09.

The trend line for the area and production of total pulses in the State shows that they are negative in nature.

5.3 Oil Seeds

Groundnuts, seasum, mustard, and niger are the main oil seed crop grown in the State. The coverage or area under oil seeds was 850 thousand hectares during 1982-83, but it declined to 266 thousand hectares in 2002-03, a reduction of about 60.70 or an average fall rate of 3.43 per cent with a slope of –28.70. The production of oil seeds also declined by 85 per cent or an average decline rate of 4.23 per cent with a slope of –41.60 during the same period.

5.4 Fiber Crops

Commercial crops produced in the state are *jute, mesta* and *cotton* that comes under fibre crops. Fibre crop production was 672 thousand M.T. in 1982-83 and decreased to 231 thousand M.T. in 2002-03 implying a reduction of about 65.62 per cent over and 3.28 per cent on annual basis. Similarly, the area under fibre crops, which was 99 thousand hectare in 1982-83 declined to 70 thousand hectare in 2002-03. The decline was 29.29 per cent.

The trend line for area and production of fibre crops in the state shows that it decline in production was more in comparison to the decline in area. The trend value is –1.37 and –27.76 for area and production respectively.

Vegetables

The area under vegetable cultivation was 532 thousand hectares in 1982-83 and it increased to 597 hectares in 2002-03. The rate of increase in area was 12.21 per cent with a slope of –8.46; but vegetable production registered a high positive growth rate of 49.13 per cent over the period with an annual growth rate of 2.45 per cent.

5.5 Condiments and Spices

The main productions in this category are chillies, garlic and turmeric. The total area cultivated under this crop was 140 hectares in 1982-83 and increased slightly to 144 hectares in 2002-03 which registering an overall growth rate of 2.05 per cent and annual growth rate of 0.14 per cent. But the production increased by 17.17 per cent during the same period with a slope of 1.6. The same is –0.17 for the area cultivated for fibre crops.

After an exhaustive analysis, the findings of the study are summerised in a tabular form below. Table-4 presents the total growth rate, annual growth rate and the slope of the trend for the total agricultural production in the state.

TABLE-4

Trend of Agricultural Production in Orissa

Name of the Crop	Total Growth Rate (%)		Annual Growth Rate (%)		Trend Value	
	Area	Production	Area	Production	Area	Production
Cereals	–14.26	–34.19	–0.65	–1.70	–22.28	38.57
Pulses	–61.79	–70.12	–3.00	–3.90	–74.43	–51.09
Oil Seeds	–60.70	–84.61	–3.43	–4.24	–28.70	–41.60
Fibre	–29.29	–65.62	–1.46	–3.28	–1.37	–27.76
Vegetables	12.21	49.13	0.61	2.45	–8.46	–0.74
Condiment & Spices	2.05	17.17	0.14	0.05	–0.17	1.6

Conclusion

The study reveals that except rice, which shows a fluctuating trend, the production of all minor cereals and non-cereals exhibited a declining trend over the period in Orissa. Hence, on the whole the agricultural production in the state has deteriorated. In order to increase agricultural production, a suitable cropping pattern should be evolved taking into account the agro-climatic conditions of different zones in the state, for both agricultural production.

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Import Liberalisation, WTO And Crisis In Indian Agriculture

Dr. Sudhakar Patra
Dept. of Economics
N.C.(Auto) College Jajpur

1. INTRODUCTION

The agricultural sector contributes 26% of the country's national income and provides employment to 65% of her population. After the introduction of economic reforms and globalisation in July 1991, Indian agriculture is a cross road and suffers from decline in agricultural growth an the one hand, the government have substantially reduced development expenditure fore agriculture and on the other hand, import liberlisation has failed to provide remunerative prices to the farmers for their agricultural products. During the post-reform period, many farmers have curtailed their farm operations which in the turn, have increased unemployment among the agricultural workers. The impact of economic reform has been less positive and more negative to Indian agriculture. Neither agricultural production nor productivity has increased in the country.

2. OBJECTIVES

This research paper intends to analyse the impact of new economic policy of 1991 and Agreement on Agriculture (AOA) under WTO regime in 1994 on production and export of Indian agriculture.

3. ECONOMIC REFORMS AND INDIAN AGRICULTURE

The economic reforms of July 1991 is a curious mixture of short run stabilisation policies and long run structural adjustment programme. Internal and external liberalisation, privatisation, globalisation, market friendly status are the special features of the reform process in India. But these reforms did not include any specific package for agriculture and allied sector. It was expected that freeing of the agricultural market and liberalisation of the external agricultural trade will provide price incentive for the farmers thereby leading to higher agricultural investment and output. But after 1991, the overall agricultural growth rate has declined, which has caused reduction in per capita foodgrains

output and inadequate employment generation. Table 1 provides data on the total area under and output of food grains from 1998 to 2004.

TABLE-1

Area And Production Of Major Crops In India

(Area in Million Hectare & Production in Million Ton)

Year	Area under foodgrain	PRODUCTION OF				
		Rice	Wheat	Course Cereal	Pulses	Total Food Grains
1998-99	125.17	86	71	31	15	204
1999-00	123.10	90	76	30	13	210
2000-01	121.05	85	69	32	12	198
2001-02	121.91	92	71	35	14	211
2002-03	113.13	76	69	26	11	183

Source : Statistics at a glance, 2004, Ministry of Agriculture. Government of India.

It is clear that the area under foodgrains was 125.17 M.H. in 1998 which tell to 121.05 M H in 2000 and to 113.13M in 2002-03. So the farmers have reduced their agricultural operations in the post-reform period. Similarly, the production of rice has declined from 86MT in 1998-99 to 76MT in 2002-03. The wheat production has also fallen from 76MT in 1999-2000 to 69MT in 2002-03. The story for total foodgrains production is not different, its production coming down to 183MT in 2002-03 from 204MT in 1998-99. No doubt, agricultural production is subject to many natural factors, but the declining trend in the production of rice, wheat, pulses and total foodgrain speaks of a serious crisis in Indian agriculture during post-reform period.

4. COMPOUND GROWTH RATE OF AGRICULTURAL PRODUCTION IN PRE-REFORM AND POST-REFORM PERIOD IN ORISSA.

This section seeks to analyse the changes in the compound growth rates of agricultural production during five decades from 1950 to 2000

in Orissa. The period of 50 years is divided into four Pre-Reform period, such as 1950-60, 1960-70, 1970-80, 1980-90 & one post-reform period 1990-2000.

TABLE-2

Compound Growth Rates of Production of Crops From 1950 To 2000 In Orissa

Crop	1950-60	1960-70	1970-80	1980-90	1990-00
Cereals	0.011	0.002	–0.002	0.013	–0.008
Pulses	0.876	0.023	0.213	0.008	–0.036
All Food grains	0.018	0.004	0.001	0.012	–0.011
Oil seeds	–0.002	0.063	0.011	0.028	–0.024
Fiberes	–0.051	0.038	–0.045	0.036	–0.044
Vegetables	–0.009	0.071	0.003	0.004	0.076
All crops	0.009	0.007	–0.001	0.012	–0.006

Source : Orissa Economic Survey 2003, Bureau of Economic & State, Government of Orissa.

The compound growth rate of cereals is positive during 1950-60, 1960-70 & 1980-90 but negative (–0.008) in the post-reform decade. Similarly, the production of pulses has positive compound growth rates in all pre-reform decades, but it is negative (–0.036) in the post-reform period. Similarly, the compound growth rates of production of all oilseeds, was fibres was 0.044 and all crops was –0.006. If State of Orissa is considered as a sample growth rates of agricultural production the post-reform period has a clear indication of crisis in the sector.

5. AGREEMENT OF AGRICULTURE (AOA) UNDER WTO AND GLOBAL AGRICULTURAL TRADE

The Uruguay Round agreements signed in Marrkesh in April, 1994 made drastic changes in the global agricultural trade rules. The important features of this agreement are as follows.

a) Reduction of tariffs an the import of agricultural products.

b) Withdrawal Export subsidies

c) Domestic support : All domestic supports or subsidies were to be reduced India as a signatory to W.T.O. agreement is committed to the above rules.

6. GROSS CAPITAL FORMATION IN AGRICULTURE AND REDUCTION IN INVESTMENT

The agricultural sector and farming operations have become less profitable in the post-reform period due to the lack of price incentives. So the farmers have reduced their farming operations leading to decline in investment and capital formation in agriculture. The following table-3 shows the share of the agriculture and allied sector & in total gross capital formation in the post-reform period.

TABLE-3

Per centage Share of Capital Formation of Agriculture And Allied Sector & In Total GCF

Year	Public Sector	Private Sector	Total
1990-91	7.1	11.9	9
1991-92	6.6	9.9	8
1992-93	6.7	10.5	9
1993-94	6.9	9.4	8
1994-95	6.7	7.7	7
1995-96	7.1	5.9	6
1996-97	7.0	7.5	7
1997-98	6.2	7.5	7
1998-99	5.7	7.8	7
1999-00	5.4	8.5	7
2000-01	5.4	8.5	7
2000-02	6.2	5.8	5
2000-03	6. 0	5.4	5

Source : Agricultural Statistics at a glance, 2004, Ministry of Agriculture, Govt. of India.

The gross capital formation in agriculture was 9% of total GCF in 1991, but it fell to 5% in 2002-03. If the private and public sector are

compared it is found that the reduction in GCF by the public sector is marginal, but in the private sector the per centage share which was 11.9% in 1990-91 fell to only 5.4% in 2002-03.

7. CONCLUSION

The economic reforms have caused a crisis in the agricultural sector. Our study reveal & that both area under cultivation and production of different crops in the post-reform period do not exhibit the same grant rate s in the Pre-Reform period. The Govt. of India has reduced development expenditure in the agricultural sector in its eagerness to reduce fiscal deficit. The import liberalisation due to the agreement on Agriculture under WTO regime has brought down the prices of the agricultural products. The reduction in agricultural subsidy has increased the cost of farming operations. Many farmers producing commercial crops have committed suicide in different states due to non repayment of loans incurred for formulate a agricultural operations. Hence there is an urgent need to formulate a suitable agricultural policy in India.

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Crisis in Indian Agriculture Under Globalisation

Sri Surendra Swain
Department of Economics,
K.K.S. Women's College,
Balasore - 756 003.

I

Agriculture is considered the backbone of the Indian economy. Out of 328.73 mha of total geographical area of the country, about 141.23 mha, (43%) comprise agriculture area. Irrigated area is about 40% and rain fed agriculture area is 60%. In 2005-06, agriculture accounted for 22% of the GDP and provided employment to 58% of the country's population. Undoubtedly, India is the 'second' largest food producer in the world, next to China and also has the unique rank in world agriculture production in various agricultural products.

In 1990s, two significant developments took place in Indian economy. One was liberlization of the economy as a part of the economic reform programme initiated in July, 1991 which opened up of the Indian economy to the world economy and the second was the formation of the World Trade Organization (WTO) on January 1, 1995. These two changes fundamentally changed global trade picture of India in the Agricultural sector.

The new economic policy has neglected the agricultural sector as compared to the industry, trade and services sector. Indian agriculture has been passing through a serious crisis during the post-reform period. Besides domestic concerns such as decline in productivity, high input-cost, stagnated net sown area, declining public sector investment, inadequate availability of institutional credit, depressing prices of farm products and rising agricultural imports, Indian agriculture has also been facing external challenges under the WTO regime. Under WTO regime, Government of India has either abolished quantitative restrictions or reduced import duties on 1479 farm products. The developed countries continue to subsidise 48% of their total farm production. This subsidy

is less than 8% in India. The marginal and small farmers cannot complete with artificial low prices at which farmers from the rich countries dump subsidy-supported agricultural goods a situation that is obviously Just not fair. As the former UN Secretary General, Kofi Annan noted during the World Food Summit, 2002: "Put yourself in the shoes of small developing country, which cannot export agricultural products because of restrictions and tariffs, in the developed countries."

The data released by National Accounts Statistics (NAS) shows that there was deceleration in both livestock and crop sectors, but more markedly for crops. Within the crops, only fruits and vegetables, spices, drugs and narcotics continued to grow at over 2.5 per cent per annum. Excluding these, the growth rate of output of the remaining crops fell below 0.5 per cent per annum after 1996-97. The striking features of NAS data is that real per capita food consumption of cereals, pulses, and edible oil and its growth decreased for all types of food including fruits, vegetables and milk.

The Indian government's move to import wheat in 2006-07 after a gap of 5 years has stirred a fresh controversy about India's claim that we have finally achieved food security. According to the UNDP's Asia-Pacific Human Development Report, 2006 India like other Asian countries has been neglecting agriculture, bedrock for the poor and turning out net importer of the foodgrains under the free trade regime. After many years as a food exporter, India has turned to be a cheap importer because of the opening up of agricultural trade.

During the post-reform era, growth rate of agricultural production annually has declined except for few a years as shown below :

TABLE-1

Growth Rate of GDP and Agricultural Production (in per centage)

Year	GDP Growth rate (At 1993-94 factor cost)	GDP Growth in Agriculture and Allied Sectors
1992-93	5.1	5.8
1993-94	5.9	4.1
1994-95	7.3	5.0
1995-96	7.3	–0.9

1996-97	7.8	0.6
1997-98	4.8	–2.4
1998-99	6.5	6.2
1999-00	6.1	0.3
2000-01	4.4	–0.1
2001-02	5.8	6.5
2002-03	4.0	–5.2
2003-04	8.1	9.1
2004-05	7.5	0.7
2005-06	8.2	2.3

Source : Ministry of Agriculture, Govt. of India.

II

Various factors are responsible for the present slow growth in Indian agriculture during the post-reform period.

(a) The economic reforms did not include any specific package for agriculture till 2006, rather the Government curtailed subsidies on seeds, fertilizer, pesticides, electricity etc. These vital inputs of agriculture were handed over to private companies. Government did not even introduce any system to control the quality of these inputs. The Multinational Companies (MNCs), which control the international market for seeds, fertilizer and pesticides, took the opportunity and supplied spurious seeds and pesticides. Consequently, the prices of seeds, fertilizers and pesticides. Consequently, the prices of seeds, fertilizers and pesticides increased and yield per hectare declined.

(b) Import liberlization has contributed in a big way to reduction in prices of agricultural products. The developed countries have marched ahead in the agricultural sector. Specially, North America and Europe, quadrupled their net cereal exports between 1970 and 2000. The expansions in cereal production and trade of these countries were fuelled by Government subsidies that supported the price of grain and underwrote

exports, driving down prices in the world market. On the other hand, the farming community in UDCs like India cannot complete with the rich farmers of western countries due to old methods of cultivation, low subsidies and poverty. According to OECD, every year roughly around $280 billion is transferred in rich countries to the agricultural producers, while developing countries are lectured on the distorting effects of agricultural subsidies. Having failed in getting remunerative prices for their products, many farmers in India curtailed their farm operations, which, in turn, has increased unemployment among the agricultural workers.

India has removed quantitative restrictions (QRs) for 1429 items i.e. 715 items by March 2000 and 714 items by March 2001. Of these, 2008 items belong to the agricultural sector. India has earlier successfully revised the binding levels on 15 tariff lines, which included skimmed milk powder, spelt wheat, etc. Following the provisions of WTO, the government of India opened up the domestic market of the agricultural and agro-based products

Source : Official Website of Development of Agriculture and Cooperation, Government of India.

(c) In its eagerness to reduce fiscal deficits, the government has substantially reduced the development expenditure in agriculture sector, which resulted is less investment of agriculture for example during 2002-03, the gross capital formation (GCF) in agriculture and allied sector at 1993-94 prices was Rs. 20066 crore. The per centage shares of public and private sector in gross capital formation respectively were 6.0 per cent and 5.4. Investment in agriculture and allied activities as a per centage of total GCF declined from 9.0 per cent to 5.0 per cent during the period from 1990-91 to 2002-03. Agriculture is basically a private sector activity. Public investment has a critical role to play in creating the infrastructure in terms of irrigation, roads, markets, storage facilities, electrification and technology development. All these were adversely affected because of lack of public investment.

CONCLUSION :

The impact of economic reforms and WTO on agriculture is not unmixed positive as well as negative. There is positive impact in some areas like floriculture, horticulture, dairy etc. But the reform measures have not yielded the desired results in agricultural production, productivity and exports. Further, the WTO regime brought new problems like food and seed insecurity loss of bio-diversity, ecological imbalances and bio-piracy.

But whatever may be the drawbacks, globalization has become a permanent guest whether we like it or not. At present what we can do is curb and control its negative fallout. The poor farmers may be benefited in the era of globalisation, if there is paradigm shift in the provision of opportunities assuring them access participation in the global market. The Government of India has already taken suitable steps by launching Bharat Nirman Programme (2005-2009) with Rs. 1,74,000 crore for achieving identified goals in six selected areas of rural infrastructure i.e. electricity, road, drinking water, telephone, irrigation and housing.

The Approach paper for the 11th Five Year Plan (2007-2012) outlines an agricultural GDP growth of 4% per annum with the development of irrigation, water resources, fresh dynamism in agriculture etc. For the success of the agricultural sector, the developing countries like India must compel the developed countries to reduce their barriers in the way of their agricultural.

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Second Green Revolution : New Horizons For Agricultural Regeneration

Dr. Surendra Nath Behera
Reader in Economics
D.D.(Autonomous) College,
Keonjhar

Ranjita Kumari Mohanty
Lecturer in Economics
Govt. Women's College,
Keonjhar.

INTRODUCTION :

The importance of agriculture in the national economy rests upon providing food security, meeting nutritional requirement, generating employment and achieving self sufficiency. Since mid-1960s the traditional agricultural practices are gradually being replaced by modern technology and farm practices. Initially the new technology was started in 1960-61 as a Pilot Project in 7 districts and was called Intensive Agricultural District Programme (IADP). Later on, the High Yielding Varieties Programme (HYVP) was added and the strategy was extended to cover the whole country. This strategy is known by different names, such as, New Agricultural Strategy, Seed-Fertilizer-Water Technology or simply Green Revolution. It was originally confined to wheat and rice to bring about quantum jumps in productivity. It is a measure breakthrough in Indian agriculture.

GENESIS OF THE NEW STRATEGY :

The main thrust of the new agricultural strategy is the application of a package of improved practices such like as, improved seeds, fertilizers, plant protection measures etc. The ingredients of the new strategy is the miracle of the improved varieties of seeds and dwarf varieties of wheat. It puts emphasis on production augmenting in puts such as fertilizers, pesticides, and HYV Seeds, and use of labour saving implements like tractors, threshers, weedicides etc. The strategy also focuses on. The objectives are to bring about a marked improvement in agro production within a short period. This was aimed to be achieved through awareness, acceptance and adoption.

IMPACT OF THE NEW STRATEGY :

The favourable impact of the Green Revolution is increase in agricultural production particularly in crops like paddy and wheat, employment opportunities significant change in cropping pattern, strengthening forward and backward linkages between agriculture and industry and enhancing the probability of the farmers. The new technology has made agriculture cost-effective by boosting agricultural productivity.

A look at the achievements of the strategy shows that there is an increase in rice production from 35 million tonnes in 1960-61 to 90 million tonnes in 1999-2000. For wheat, the yield has increased from 11 million tonnes to 76 million tonnes and the yield per hectares has increased from 8.5 quintals to 27.6 quintals per hectare during the same period.

Table-1 shows the achievement of the strategy on irrigation, cropping intensity and consumption of fertilizers and pesticides and in terms of index of agricultural production.

TABLE-1

Achievement Indicators of the Green Revolution

Year	Index of agricultural Production (1980-81 = 100)	Per centage of irrigated Area	Cropping intensity	Use of of Pesticides in 000, tones	Consumption Kg/ha.
1960-61	68.8	–	114.7	8.62	1.90
1970-71	85.9	38.4	118.2	24.32	13.13
1980-81	102.1	40.7	123.3	45.0	31.83
1990-91	148.4	45.5	130.3	75.00	67.49
1995-96	160.7	48.6	131.2	61.26	74.81
2000-01	163.9	40.6	131.1	67.71	76.14

Source : Economic Survey, 2001 Bureau of Economic State, Government of Orissa.

It is evident from the table that the index of agricultural production has reached 163.9 in 2000-01 and per centage of irrigated area has increased from 38.4 in 1970-71 to 48.6 in 1995-96. However there is a decline in 2000-01. The cropping intensity, use of pesticides and

consumption of fertilizers have made a remarkable increase between 1960-61 and 2000-01.

TABLE-2

Area of different Crops under HYV

(Million Hectares)

Crop	1970-71	1980-81	1990-91	1995-96	1996-97	2001-02
Paddy	5-6	18.2	28.1	31.4	33.4	44.6
Wheat	16.5	16.1	20.4	23.1	23.7	25.9
Jawar	0.8	3.5	6.7	3.6	3.8	9.9
Bjara	2.0	3.7	5.1	7.5	8.3	9.5
Maize	0.8	1.6	2.6	5.5	6.1	6.6
Total	15.4	43.1	62.9	72.3	76.4	121.9

Sources : Economic Survey 2002-03 Bureau of Economic State Government of Orissa.

It is evident from the table that for the crops like paddy, wheat, Jawar, Bajra and Maize under HYV have increased significantly between 1970-71 to 2001-02 and during the same period the total area under HYV has increased from 15.4 million hectares to 121.9 million hectares.

The success of the strategy has also been measured by increase in per capita availability of food grains of cereals and pulses, and increase in the production of cash crops.

LESSONS FROM THE GREEN REVOLUTIONS AND PROBLEM AREAS :

The Green Revolution initiated by the new strategy was initially limited to wheat, maize and bajara only. Progress in major commercial crops like oilseeds, cotton and jute is very slow. Spectacular rise in food grain production has taken place since the 1960s in Punjab, Haryana, West Bengal and U.P and in some districts of Andhrapradesh, Maharastra and Tamilnadu, Therefore, it has increased regional inequalities. As it is limited to the big farmers. They became richer by this strategy. The small and marginal farmer neither had land nor resources to adopt the new technology. The technology made farming

capitalistic. The limited spread of the Green Revolution has become a cause for concern since it has remained "crop-specific", region-specific and 'class-specific'. The application of new technology in large farms has led to substitution of human labour with mechanical processes. The greatest sufferer in the process are the landless labourers.

RENEWAL AND REGENERATION OF AGRICULTURE FOR THE SECOND GREEN REVOLUTION AND PROSPECTIVE TASKS AHEAD :

Considering the limitations of first Green Revolution, India is planning to introduce 'Second Green Revolution' for food and nutritional security of the people, while at the same time augmenting farm incomes and employment through this new approach. This new approach would include introduction of; 'New Deal' to reverse the decline in farm investment through increased investment in irrigation, technological research in agriculture and watershed development. The Prime Minister at the recent Indian Science Congress meeting, emphasized the need for a Second Green Revolution, which would be a programme of agricultural renewal as suggested by the National Commission for farmers. The five components suggested by the National Commission for farmers.

(i) Soil health Enhancement,

(ii) Water Harvesting,

(iii) Crop and life Insurance Reform,

(iv) Development of appropriate technologies and

(v) Improved Opportunities for Market Produce.

Two more elements added to the agricultural renewal are :

(i) Application of bio-technology for improvement of seed quality.

(ii) Application of science for animal husbandry to improve livestock productivity.

Emphasis on non-food crops like horticulture and new plant varieties are the promising areas of agricultural renewal.

The Second Green Revolution can be operationalised by taking the following measures.

1. Soil Health Enhancement :

Greater involvement of a agricultural research Institutes, issue of soil health card campaign, demonstrations on fodder and grains in crop rotation, cultivation of green-leaf manure crops, integrated wasteland land development, breeding soils for higher productivity and community land care movement by Panchayats are the suggested areas for soil health enhancement.

2. Use of Drought Specific HYV seeds :

As stressed by the Prime Minister the Second Green Revolution has to begin in dry-farming areas with introduction of drought resistant short duration crops. Dry land farming technology has to be location-specific depending on the type of soil, rainfall pattern and agrarian practices.

3. Irrigation Water supply Augmentation and Demand Management :

A Water Literacy Movement should be launched and regulations should be developed for sustainable use of ground water Soil and water, conservation measures should be taken up with special emphasis combating soil erosion.

4. Credit Reform :

The farmers facing erosion in income and capacity to weather market failure should be given greater access to institutional finance through to livelihood finance, not just micro-finance.

5. Crop Insurance :

In order to provide financial support to cultivators in the event of crop failure on account of natural calamities there is a need to expand the coverage of crop insurance from the existing situation of 14% to all farmers and all crops in a time bound manner.

6. Agriculture Risk Fund :

The government may create an Agriculture Risk Fund to provide relief in the form of waiver in full or part of loan and interest in the event of successive natural calamities. The contributions to this fund should come from the central government, state government and banks in a determined fashion.

7. Market Reform :

For assured and remunerative marketing of the agricultural products, market reform should begin with production planning so that every link in the chain, cultivation-consumption-commerce receives adequate and timely attention.

8. Dissemination of Technology through Farmer Self Help Groups :

The farmers should be trained to use the agricultural inputs in a cost-effective manner, which calls for extension and training. There is need for restructuring technology delivery and support system to meet the multiple needs of the farmers including intensive training in skill and production system. A Single Window System at the grassroot & level for technology delivery and support services is proposed.

To sum up, the Second Green Revolution, by bring in a about agricultural renewal and prosperity will go a long way in improving farm productivity, farmers' income and employment and making agriculture sustainable.

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Indian Agriculture : Its Problems And Prospects

Gouranga Panda
Lect. in Economics
Nilamani Mahavidyalaya,
Rupsa, Balasore

1. INTRODUCTION :

Agriculture is described as the backbone of the Indian economy. Besides, agriculture is a source of livelihood and food security for the majority of vast population of India. Agricultural growth has direct impact and on poverty eradication, through expansion of on-farm and off-farm employment, in containing inflation and raising agricultural wages. The share of agricultural products in the total export earnings is also substantial.

2. PROGRESS IN INDIA AGRICULTURE :

India inherited a stagnant agriculture at the time of independence in 1947. To enhance the growth process in agriculture was the first task of the government of India in the post independence era. Although India was suffering from food deficit for about two decades after independence, she is now not only self sufficient in foodgrains but also has a surplus of food grains. With the introduction of High Yielding Varieties. (HYVs) of crops and the development of infrastructure for agriculture, the situation took a new direction after the mid-1960s.

The public sector played a significant role in promoting agricultural research and education. Public investment in agriculture, specifically in irrigation was stepped up. Large investments were made for the development of research system, under the aegis of the Indian Council of Agricultural Research (ICAR) and the State Agricultural Universities (SAUs). At the same time, a well designed extension network was created for disseminating new technologies to the farmers. Apart from the Public sector rural infrastructure, farmers developed their own 'on-farm' resources. The marketing support through procurement operations

encouraged farmers to increase production. The production of various agricultural products has increased substantially, over the different plan periods. The Green Revolution in crops, White Revolution in milk production, Yellow Revolution in oilseeds and Blue Revolution in fish production and Golden Revolution in horticulture are the ample testimony to the contributions of agricultural research and development efforts undertaken in the Country.

3. PROBLEM AREAS OF INDIAN AGRICULTURE :

Agricultural growth has decelerated during the 1990s. Several factors can be attributed to this. Different states have introduced policy measures to enhance agricultural production through subsidies on inputs such as, water, power and fertilizers, rather than building new capital assets in power and irrigation sector. This has adversely affected growth, and reduced the pace and pattern of technological change in agriculture. The increase in output through subsidisation of inputs like fertilizers, pesticides and water has been at the expense of deterioration in the aquifers and soil. The environmentally unsustainable approach may partly explain the rising costs and slow growth in productivity in agriculture, notably in Punjab and Haryana.

While subsidy given to agriculture is going up, investment in agriculture is falling. According to the 10th Plan document, share of agriculture in the total Gross Capital Formation (GCF) has come down from 17.7% in 1978-79 to about 8% in 1999-2000. In particular, public sector investment in agriculture has declined. Through, the share of private sector in agriculture GCF is increasing, it cannot substitute for the public sector investment, especially in the development of infrastructure, such as rural roads, electricity, irrigation, agro industries and animal health services.

Although consumption of subsidised of fertilizers has shown a rise in the past two decades. The retention pricing scheme is the main culprit of the burgeoning fertiliser subsidy bill, as it has left the fertilizer producers without any incentive to raise efficiency claim excess subsidy by inflating utilisation levels. It would be wrong to call the fertiliser subsidy a farmer's subsidy, because it is mainly a subsidy to benefit the inefficient fertilizer industry.

Soil erosion has resulted in depletion and up-surging ground water tables, water logging and salinity. A large cropped area (62%) is still dependent on monsoon, as irrigation facilities are inadequate. The eastern region has a large ground water potential, but it has remained unexploited. The irrigation potential remains hugely untapped, because of massive time and cost over-runs on projects and poor planning that results in water logging of vast tracts.

Although the availability of quality seeds over the time has increased substantially, the Seed Replacement Rates (SRRs) for the most of the crops remain inadequate and below the desired levels.

Another crisis area is the growing fragmentation of farm holdings. Over the years, the proportion of marginal holdings that are less than one hectare has been increasing sharply. Over all, the average size of holdings has gone down from 2.30 hectares in 1970-71, to 1.55 hectares in 1990-91. This trend has increased the pressure on per unit of land and contributed to the decline in productivity.

Inadequate credit to agriculture is another matter of concern. The Economic Survey 2004 noted that although there was a substantial increase in the farm credit in the first two years of the 10th Plan, the increase was below the Plan projections. The credit flow to agriculture is not only grossly inadequate but also the cost of credit to the sector is quite high. The rate of interest charged on agricultural loan is high compared to other sectors. Indebtedness and high rate of interest on loans is one reason behind the cases of suicide by farmers in Andhra Pradesh, Karnatak, Maharastra, Punjab, Rajasthan and Tripura.

Another crisis area is the defective agriculture marketing in India. Every year 15% to 30% of the agricultural production are damaged either by rats or rains due to the lack of proper storage warehousing facilities. In the absence of transportation facilities in the rural area. The Indian farmers cannot reach the near by mandies for the sale of their produce at a fair price. A large number of intermediaries exist between the cultivators and the consumers. All these middlemen and dalals claim a good amount of margin and thus reduce the returns of the cultivators. Poor farmers having no waiting power, have to sell their produce at low prices under adverse circumstances. There are a huge

number of unregulated markets, which adopt various malpractices. Adoption of false weights and measures and lack of grading and standardization of products in the village markets in India are always going against the interest of ignorant, small and poor farmers. Indian farmers are unaware of the ruling prices of their produce prevailing in big markets. Thus improvement of agricultural marketing in India a utmost need of the hour.

4. A NEW DEAL FOR AGRICULTURE :

The agricultural sector clearly merits a "new deal" by massive capital investment for the creation of new irrigation, storage and transportation infrastructure, particularly in the rain-fed areas. Since the money available is limited, a good part of this must come from trimming the misdirected and inequitable subsidies to make funds available for direct investment in expanding agricultural infrastructure.

A multi-dimensional reform agenda for agriculture should be drawn up for improving production and productivity empowerment of the poor by improving their access to land and common resources, and extending protective crops insurances cover to the poor farmers. A review of myriad controls in domestic market of agricultural produce is an urgent necessity. Other institutional reforms relate to land laws and rural credit. There is imperative need for exploitation of ground water potential in the rain-fed and better water management.

To achieve the target of more than 4% growth rate in agriculture sector, as envisaged in the National Agriculture Policy (NAP-2000), at least 8% growth, in each of the sub-sectors, namely, horticulture, livestock products and fisheries, would be required.

For achieving the higher growth rate, it would be essential to unleash the untapped potential of major farming systems through an integrated packages of technologies and services including inputs like seeds and public policies. While achieving new gains, we have to defend what has already been achieved through the conservation and sustainable development of our natural resources and spread of eco-technologies (technologies which are environmentally and economically desirable).

Raising yields and improving quality of produce through appropriate input management, provision of rural infrastructure (warehouses, market yards, access roads), creation of facilities for primary grading / sorting, use of information technology to deliver price and market information to farmers contract farming and supply chain management are key areas that need attention and policy support. In these activities, the State Governments have a key role to play. The conservation of natural resources (land, water, biodiversity, forests, living aquatic resources, atmosphere) needs to be given due attention.

Harnessing new technologies, like biotechnology to usher in a second green revolution is also necessary. There is a need to pay much greater attention to create exportable surpluses and make the Indian agricultural products more competitive.

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Post Reform Crisis In Indian Agriculture : An Overview

Dr. Padma Charan Dhal
Deptt. of Economics
Kharasrota Mahavidyalaya

MS. Ifat Nawaj
Deptt. of Economics,
S.A. Mahavidyalaya, Khurda

In India, the agricultural sector constitutes the core of the Indian economy in many ways. It provides food security and flow of raw material for the industry, it absorbs a large number of working population and also generates demand for the outputs of the rest of the economy. This sector contributes nearly 18.5% of 42% to the national income of the country in 2006-07. The living conditions of the people in rural areas depends on agricultural activity. This sector also is basic for the "wage goods of development as suggested by P.R. Brahmananda. The Indian economy is trying to adjust to the globalised trading system by conforming to the WTO stipulations the role of and in this context, the agricultural sector has come into focus and scrutiny by economists and planners. Among the numerous issues pertaining to agricultural sector and the rural economy of India, four important areas deserve attention. i) price policy, ii) strategy for water resource management and sustainable economic development., iii) finance of rural development programme, iv) rural non farm employment.

II. ANATOMY OF EARLIER STRATEGIES FOR AGRICULTURAL DEVELOPMENT :

The anatomy of earlier strategies for agricultural development may be discussed under following five broad heads.

1. Impact of Green Revolution

The impact of green revolution has economic and sociological impact.

So far as economic effects are concerned it has helped in increasing production and productivity. But the sociological impact reveals that it has promoted both personal and regional inequality. This could be expected as a natural consequence of the shift of the strategy from something everywhere to everything somewhere. This is confirmed by a comparison of the state wise cumulative growth rate of agricultural production.

2. New Economic Policy

Agriculture has been rightly described as India's giant in the chains. The sector is regulated by many central and state laws relating to land holdings, supply pricing, storage, transportation, marketing, export, import, taxation and credit. The net effect of these control measures has been to reduce agriculture to an over regulated activity.

3. New Agricultural Policy-2000

The new agricultural policy, 2000 envisaged increasing capital formation, improving terms of trade and rationalisation of domestic tax structure for the development of agriculture. It encourage private investment in agriculture, agricultural research, human resource development, post harvest management and marketing. It laid stress on creation of favourable economic environment and supportive public management system to promote agricultural export. The policy encouraged consolidation of holdings and sought to keep agriculture outside the regulatory and tax collection system.

4. National Commission On Farmers

The constitution of National Commission on farmers on the 10th February, 2004 is a landmark in the history of Indian agriculture. Affect reviewing the status of agriculture and assessing the conditions of different categories of farmers in various regions; the commission submitted its report titled "Serving farmers and saving farming". This report was designed to serve as a wake-up call to the nation on the deteriorating farm conditions as well as on the opportunities available to enhance India's agriculture.

5. Other Reform Measures

The reform measures initiated by our national government are two-fold in nature first generation reforms and second generation reforms. The first generation reform is associated with new economic policy initiated in 1991. The second generation reform called operation 2G was coined by Sebastian Edward in 1996 and was operative in India in the same year. It implied independence of the Central Bank budgetary constraint on all levels of Government, creation of an efficient civil service, improvement in the citizen's security and judicial reforms to strengthen the rule of law. The first phase of reforms was relatively easy as the required changes in trade, finance, agriculture and fiscal

areas were known. In the second phase issues of equity, regional and sectoral allocation, good governance and institutional changes were more prominent. Hard decision & on competition policy, labour policy, disinvestment and privatisation would be taken.

PITFALLS IN THE REFORM MEASURES

The first generation reforms were essentially crises-driven. This is evident from the following facts :

(i) The agricultural price policy pursued by the Government of India since 1960 needed some alternative course of action in view of the change in overall policy environment and WTO provisions to which Indian agriculture is being gradually exposed.

(ii) Strategy for water resource management and sustainable development initiated by the Government has proved futile in view of environmental consideration, cost effectiveness, timely completion of projects and maintenance of irrigation scheme etc.

(iii) It is discernible that the poor and disadvantaged groups have not benefited much from rural development programmes. Local planning was of random walk type manned by bureaucracy. An integrated approach to multi-sectoral planning at the village level from below involving the poor and disadvantaged in the formulation and execution of rural development projects is wanting. People had no say in the financing, execution and maintenance of these development projects.

(iv) One acid test of success of any growth programme or development plan is the generation of gainful employment in the locality. The scope for such gainful employment found was not adequately in the local farm activities as well as in non-farm activities. This is particularly important in the present day context of globalisation of the agricultural sector of our economy. The rural & agricultural sector in particular has not gained the desired momentum of growth.

Hence man power development both in the farm and non farm sector is the dire need of the day.

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"Second Green Revolution – An Inevitability for India"

Bhagaban Padhy
Lecturer in Economics,
A.N. College, Dharakote,
Ganjam, Orissa
Ph.: 06822-271207, Mob.: 9861190516
E-mail : bhagabanpadhi@sify.com

I INTRODUCTION :

Agriculture plays a vital role in our economy, yet its share in our GDP has been declining, currently the contribution of agriculture to our GDP is only about 18.5% per cent. Yet, almost 65 per cent of our people rely on agriculture for their survival and sustenance. The Government has set a target of 7-8 per cent growth rate per annum. For the economy growing at a higher rate, over 8 per cent per annum, agricultural growth rate need to be more than 4 per cent per annum Regrettably, the average agricultural growth rate is about 1.5 per cent in the first three years of the Tenth Five Year Plan.

Although Green Revolution in the 60s brought some changes in the field of agriculture, it is partial in nature as it covered limited crops and limited areas. Besides, the revolution has created regional disparities and personal inequalities. When the share of agriculture in national income is falling rapidly, while the population dependent on agriculture is not declining correspondingly, the Prime Minister's call for a Second Green Revolution appears to be very appropriate.

Against back drop, attempt have been made to explore the following objectives :

1. To discuss the achievements of First Green Revolution.
2. To examine the ground reality for another Green Revolution in India.
3. To suggest some policy measures

2. MEANING OF GREEN REVOLUTION

"Green Revolution" refers to a well marked improvement in agro-production in a short period" and a higher level of agricultural production over a fairly long period of time.

Green Revolution started in India in mid-60s. High yielding varieties (HYV) of seeds, chemical fertilizers, irrigation, pesticides, improved agricultural machinery, credit facilities etc. were on experimental basis in seven districts of India and later extended to other areas in phased manner.

3. ACHIEVEMENTS OF GREEN REVOLUTION

TABLE-1

Progress in foodgrains production

(Million Tones)

Items	1960-61	1980-81	2001-2002
Rice	35	54	83.1
Wheat	11	36	71.8
a) Total cereals	69	19	198.8
b) Total pulses	13	11	13.2
c) Total food grains (a+b)	82	130	212.0

Sources : Economic Survey, 2002-2003.

The above table shows that the production of rice increased from 35 million tones in 1960-1961 to 54 million tonnes in 1980-1981 and then to 83.1 million tonnes in 2001-2002, showing a major breakthrough in production. Even the yield per hectare also improved from 1010 Kgs in 1960 to 2086 Kg in 2001-2002. Similarly the production of wheat increased significantly from 11 million tonnes in 1950-1951 to 36 million tonnes in 1980-81 and them to 71.8 million tonnes in 2001-02. During this period, the yield per hectare also increased from 850 Kgs to 258 Kgs per hectare which shows that the yield rate has increased by 224 per cent during the last five decades. All these could be possible due to the introduction of new agricultural strategy.

The new agricultural strategy was very much restricted to the production of food grains, mostly wheat and rice. Thus, no significant increase could be achieved in the production of commercial crops like sugarcane, cotton, jute, oilseeds.

TABLE-2

Production of cash crops in India

Items	1960-61	1970-71	1980-81	2001-2002
Sugarcane (in tonnes)	110	126	134	300.1
Cotton (m. bales)	6	5	7	10.1
Jute and Mesta (m. bales)	4	6	8	11.6
Oil seeds (m tonnes)	7	10	9	20.5

Source : Economic Survey, 1991-92 and 2002-03.

Although it is clear from the table that the production of sugarcane and other cash crops recorded some increase during the last three decades, this increase cannot be termed a significant one. Thus the green revolution was mainly confined to wheat and rice production, not in the production of other food crops and cash crops.

If we consider total agricultural production index, it increased from 68.8 in 1960-61 to 85.9 in 1970-71. Between 1980-81 and 200-2001, there was enormous rise in the agricultural production. This was, no doubt, because of absorption of new agricultural technology. However the Increase was not adequate to feed is the country's population 102.7 crores.

4. SUGGESTIONS FOR IMPROVEMENT :

1. With the globalisation of agricultural trade under the aegis of W.T.O., Indian agriculture has to compete globally and should have access to key global markets. That is why agricultural to has to be developed another green revolution.
2. There are hundreds of millions of people in Asia who do not get enough food to eat. And it appears that over the next decade or so, the problems of food security may be grave. It is estimated that India may have to import 45 million tonnes of foodgrains per annum by the year 2030 to feed her growing population. Experts pointed out that with the use of the existing technology, it may be difficult to meet the country's requirement, not only because of the unprecedented increase in population but also because of problems of resource degradation and its mismanagement. Thus another green revolution supported by new and advanced technology is the need of the hour.

3. Prolonged cultivation of rice & wheat has led to depletion of natural resources. Thus the need of the hour is evergreen revolution which cannot only revitalize the natural resources but also make way for sustainable agricultural development.

4. Increased agricultural productivity through the adoption of new strategy will have its secondary and tertiary effects as the increased production of food through HYV could reduce food imports, thereby releasing scarce foreign exchange for other purposes. Moreover increased production of commercial crops will also lead to the expansion of agro based industries in the country, especially in the rural areas.

5. CONCLUSION :

The success depends on the quantum of public awareness and people's cooperation as well as fair and honest policy initiatives of the Government. Dr. Swaminathan's proposal for a symphony approach between the governments, NGOs, Panchayats and agricultural universities to achieve what he describes as an, "Ever Green Revolution" is necessary for India.

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Indian Agriculture : Some Challenges In Globalisation Perspective

Dr. B.Eswar Rao Patnaik,
Reader & H.O.D., Economics,
S.B.G. Women's College, Berhampur

Simanchal Mishra
Lecturer
Kesinga Mahavidyalaya

SECTION-I

Agriculture provides sustenance for nearly 70% of the population of the country. The liberalisation policies are designed to improve efficiency of allocation of resources through the operation of incentives in a market economy. The three pillars of Uruguay Round Agreement on Agriculture namely, market access, domestic support and export competition are well known (Ashok Gulati, 2000). In the ensuing years agricultural market in India is bound to be progressively integrated with global markets with the following possible consequences; (i) The entry of foreign competitors into India's domestic market will stimulate local producers to minimize their costs; (ii) With reduced costs and access to imports India's exports can be rapidly expanded; (iii) With freedom of access to foreign investment the economy will benefit from an outflow of financial resources and advanced technology.

Increased exports of agricultural commodities have been noted over the years, with the liberalization of trade restrictions and abolition of quantitative restrictions on trade. The growth rate of exports in India increased from 7.7 per cent in 1995-99 to a high level of 24.1% during 2003-04. All the same, we are lagging behind Singapore, Brazil & China. Commodities like, Rice, Wheat, Oil Meals, Raw cotton, Sugar, Mushroom, Maize and Spices have registered a robust increase in exports. The economy has maintained a consistent record of export of three quarters of a million tonnes of rice in the past last five years (Y.Alagh 2002) However, with a negligible 0.7% share in world imports and 0.6% in exports, we are not visible in arena of international trade. (R. Thama Rajakshi, 2002).

What is disquieting is the decline in gross capital formation in agriculture by Public Sector from 33% of total investment in 1993-94 to

26.5% in 2001-02. The share of private sector investment in agriculture, however has sharply picked up from 67% in 1993-94 to 73.5% in 2001-02.

Even more alarming is the steep decline in the growth rate of agriculture and allied sectors from 4% per annum during the decade from 1989-98 to 2% from 1998-1999 to 2003-2004 (B.Mishra, 2006). As presented in Table-1 below, the growth rate in agriculture has been at (–)0.4% and (–)3.1% per annum in the year 2000-01 and 2002-03.

TABLE-1

Sectoral Real Growth Rate in GDP

Sl. No.	Item	1995 -96	1996 -97	1997 -98	1998 -99	1999-2000	2000 -01	2001 -02	2002 -03	Average growth rate
1.	Agriculture and Allied activities	-0.9	9.6	2.4	6.2	0.3	-0.4	5.7	-3.1	1.87

Sources : Economic Survey, Government India 2002-03, P-II.

SECTION -II

TERMS OF TRADE AND GREEN REVOLUTION

Analysts Like, Ashok Gulati and Pursell have argued that, agriculture in India has been disportected, while industry has been heavily protected. Hence, the terms of trade for agriculture have been unfavourable when compared to the situation that would have prevailed in the absence of such protection for industry.

The process of liberalisation of non-agriculture and trade have resulted in higher returns to farmers and hence a greater inflow of investible resources. The process of liberalization has made terms of trade more favourable to agriculture. Indian agriculture is beginning to appear globally competitive on account of reduction in protection accorded to manufacturing sector hither to and ensuring remunerative market oriented prices to farmers. These policy changes now provide

an opportunity to farmers and agro-processing and agro based industries to diversify production patterns away from food crops to high value products that would be suitable for processing, like maize and Barley (A.N.Sandhu & Amarjit Singh).

Enlarging agricultural exports depends on continuous increase in agriculture output along with diversion of a larger part of it to export sector.

The impact of the New Agriculture Strategy is limited because, the small man does not know how to grow for the big corporation. Agricultural research has to take into account the low investible capacity as well as risk taking capacity of small and marginal farmers and those in tribal areas. As regards the employment generating impact of package programme, opinion is divided. The Hybrid seeds mature in short duration and thus facilitate the growth of three crops in a year. In consequence, it is likely that, there will be absorption of more labourers in production programmes. Critics like, G.R. Soltani, observe that, full mechanization of wheat production in the three agricultural regions in South Central Iran has resulted in the displacement of nearly 131 hours of labour per hectare.

Due to the use of Nitrogenous, phosphatic and potassic, fertilizers the upper crust of the soil becomes so hard that, it almost turns barren. Tractors will dig deeper and bring inner soils to raise crops. Year after year the barrenness of soil crust increases losing its moisture retention capacity and may not hold rain water. The upper layer which feeds useful bacteria becomes hard and useful bacteria are killed leading to crop damage, of late, new defects were noted in crops such as, various types of rusts which resist the strongest of pesticides. So, efforts may be made to encourage the use of green manure and animal waste to retain soil fertility. The inequity bias of the NAT is obtained because large farmers have command over scarce farm resources, greater access to credit and possess greater technical dynamism.

The coverage of 70% of cropped area of the country (143 million acres) under dry land farming probably explains the lackluster performance of green revolution. Dryland areas which account for 40% of food grains output in country side hold the key for stability in India (C.P.Hanunantha Rao).

In its intensive approach, Dry-Land Farming Technology envisages at an integrated development of micro-watersheds through interdisciplinary measures, like, land and water management, crop protection, horticulture, agro-forestry and pasture development. The extensive approach of dry land forming seeks to develop areas out side the water sheds by measures like, use of drought- resistant seeds, fertilizers, use of biotechnology, seed cum fertilizers, drillers and so on. The accent of Seventh Plan exercise in India was on involvement of Research Bodies like, Indian Council of Agriculture Research, All India Coordinated research project for development of Dry land agriculture in the country. Moisture conservation through binding, constructing water harvesting structures, drainage improving and bringing about a shift in the cropping pattern form the growth of water consuming paddy to the ragi, oil seeds and the like are basic for the strategy.

The emphasis may have to shift from yield raising practices, through intensification of modern inputs to maximizing combined income from all crops in a year To maximize use of land, labour and live stock resources plan endeavor may focus on tapping fully ground water, sprinkle and drip irrigation techniques. We should strive for measures, like water harvesting techniques, biological fixation of Nitrogen Use, minimizing wastages in use of chemical fertilizers and evolution of high-yielding seeds characterized by multiple resistance to pests.

REDUCTION OF SUBSIDIES :

In a situation of resource crunch subsidies may be reduced and resources so saved may be invested in irrigation, which has high potential to increase yield (Government of India, 1993). As observed by Ashok Gulati & Rao, subsides have encouraged intensive use of inputs in limited pockets, led to lowering of productivity of inputs and substitution of capital for labour.

SECTION III

INSTITUTIONAL CHANGES : AGRICULTURE CREDIT

Consistent with the viability aspect of credit institutions the Narsihmam committee has recommended reduction of priority sector lending to 10 per cent of total lending. Some kind of rural activities of marginal & small farmers need special treatment in a collective way via RRBS under the leadership of NABARD. The RRBS may spearhead

rural transformation with the increase of Public & Private investment (Dr.Meeta Krishna). In recent times rural branches are taking up trading and money market activities.

CEILING LEGISLATIONS

On the question of ceiling legislations, economists like Gulati and Rao maintain that, tenancy reforms may be continued in the ensuing years, as farmers are able to augment their operational holding in response to changing economic and technological factors-It needs recognition that, farming can be an enterprise that involves cost returns, factor efficiency and market competition. Given cheap credit and other farm inputs small farmers can be as efficient as large farms.

On the question of freeing the lease market for lands, Appu contends that, the process/act may contribute to growth as well as efficiency by bringing into open the lease transactions. The farmers with uneconomic holdings unable to carry out agriculture operations should be able to lease out their land to efficient operators who may be small or marginal farmers. Freeing lease market may thus be conducive to efficiency and equity. Land leasing laws may be changed according to developing free market conditions and there should not be any bar on the period and size of leasing out of land. In consequence, the size of operational holding may contribute to growth with positive impact on farm business.

In recent years the country has witnessed several suicidal death of farmers in states of Maharastra., Andrapradesh, Karnataka and Orissa. Failure of cotton crop is the villain behind the scene. To reverse the trend the prevailing measures like, rescheduling of loans, and grant of lakhs of rupees to bereaved families may be supplemented by complementary poverty alleviation measures that may generate perennial flow of income around the year for poor families.

The prosperity of agriculture in a country is closely related to productivity of crops, cropping intensity and net income accruing to farmers from cultivation of an area of land. It is noticed that, the value productivity per an acre in Punjab, Tamilnadu, Haratyana and Andhra Pradesh was Rs. 3450.20, Rs 3070.40, Rs. 2329.15 and Rs. 2464.57 respectively as against the All India Average of Rs. 1889.88 in 1988-87.

There has been upward revision in the procurement Price of Common Paddy and superior Paddy of FAQ from Rs. 150 per quintal and Rs. 158 per quintal in 1987-88 to Rs. 550 and Rs. 580 in 2003-2004. Despite minimum prices fixed by Government and a clear cut policy in force, it is the middle men who manipulate prices and make huge profits at the cost of farmers who sell away their stocks at a throw away prices.

SECTION-IV

SUMMARY & CONCLUSION

In the context of international trade, it is an urgent necessity to increase investment in research, integrated market development, storage "and warehousing facilities, road development, creation of facilities for quicker & efficient transport and development of scientific system of standard grading. Public expenditure on research and technology, rural development & infrastructure will raise our AMS without attracting reduction of commitment. Possibilities may be explored for securing protection under geographical indicator for trading in traditional commodities like, Tea & Basmati Rice Up-to date information on domestic and international prices and demand should be made through local panchayats.

MNCS may provide ample opportunities for Indian companies to be cost effectiv & quality conscious both in product and factor market. The induction of new technolog in collaborative enterprises may improve production and value added processing of agricultural produce.

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Economics of Higher Education in Orissa

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Kishor C Samal
Professor of Economics, NCDS,
Bhubaneswar - 751013
E-mail : kishorsmal_05@yahoo.co.in

I. EQUITY AND FINANCING EDUCATION

Physical capital and financial capital are essential inputs but not a sufficient condition for increasing national output. The other inputs are human capital, natural capital and social capital. In the present era of liberalisation and globalisation, the human capital is considered to be most important input in the development process of a nation. Particularly in case of Orissa where higher proportion of people live below poverty line, its share in aggregate state domestic products of all major states in the country is gradually declining since 1991. Economic disparity among the states in India is growing in post-reform era. Prosperous states have prospered further while the poor ones like Orissa became poorer. The "state with greater economic strength has gained at the expense of poor states. The lion's share of forthcoming industrial investment proposals is also moving to industrially prosperous states. In spite of various Industrial Policies in Orissa since 1980, there is a process of deindustrialisation due to closure of big private sector units, loss-making PSUs, sick state sector establishments and vanishing of SSIs since 1990. Agriculture in the state is in shambles, when farmers are compelled to sell their paddy below the minimum price. Therefore, in this scenario, where physical and finance capital are not moving into Orissa since 1991, the importance of human capital in the development process of the state cannot be ignored. Educational attainment is the major factor in accumulation of human capital. No single nation in the world with illiterate and uneducated people is developed and advanced. The per centage of growth rate explained by education varies from 11 per cent in Asia to around nine per cent in Europe.

1.1 Education Expenditure in Orissa

Financing of education by government is the most important instrument for development of education in a poor state like Orissa to expedite the development process. However, after liberalisation and globalisation, in Orissa, between 1990-91 and 2000-01, the real increase in public expenditure on education was only 2 per cent, while the nominal increase during the same period was four times. Orissa spends around five per cent of SDP (Table 1) though Education Commission (1966) and Ramamoorthy Committee (1991) recommended spending of six per cent on education. The share of education in total budget expenditure during the period 1990-91 and 2000-01 is between 16 to 20 per cent. During the same period, the per centage of revenue expenditure oh education was found to be around 20 per cent which is lower than that in Bihar and Assam at 28 and 25 respectively. In spite of this, the Government of Orissa has made the strong argument in favour of reduction of revenue expenditure on education in its White Paper. The White Paper suggests to cap the expenditure on education. Thus, though the fees of students in primary and upper primary schools are said to be free; irrespective of the financial conditions of the students, the development fees at the rate of Rs. 60, Rs. 150 and Rs. 175 are being collected from each student at various stages. In addition to this, there has been increase in examination fees, fees for giving certificate, enrolment fees, etc. These steps adversely affect the poorer section of the students.

TABLE-1

Budget and Revenue Expenditure on Education in Orissa

Year	Budget Expenditure	Revenue Exp.	% of total Budget Exp.	% of total Revenue Exp.	%of SDP
1990-91	451.03	441.88	16.45	20.17	4.56
1991-92	539.01	535.01	16.38	20.30	4.21
1992-93	616.96	606.31	16.97	19.89	4.49
1993-94	681.44	674.65	16.75	19.39	4.30
1994-95	811.84	799.12	17.41	19.80	4.28

1995-96	928.38	926.33	18.05	19.72	3.99
1996-97	1,065.22	1,052.80	17.79	20.34	4.80
1997-98	1.195.09	1,193.01	18.69	21.55	4.36
1998-99	1,461.76	1,459.22	18.90	21.41	4.96
1999-00	1,913.77	1,906.27	20.67	22.54	6.13
2000-01	1,735.72	1,717.00	17.95	19.44	5.64

Source : Finance Account (various Years), Government of Orissa.

A perusal of data on inter-sector allocation within education revealed that the allocation towards elementary education within total educational expenditure moved within a range of 55 to 58 per cent between 1990-91 and 1998-99 (Table 2). It reached to the highest level of 65 per cent in 1999-00, and then decreased to 60 per cent in 2000-01. The share of higher education did not vary much and that of secondary education registered some degree of annual variation. Technical education seemed to have suffered severely in terms of relative allocations after 1994-95. The share of higher education and technical education in the total education expenditure declined from 14.39 per cent and 3.87 per cent in 1990-91 to 12.22 per cent and 1.19 per cent in 2000-01 respectively (Table 2).

TABLE-2

Intra-Sectoral Allocation Expenditure on Education in Orissa

(% share)

Year	Elementary	Secondary	Higher/ University	Technical	Others
1990-91	54.87	24.86	14.39	3.87	2.01
1991-92	58.08	22.08	15.04	3.15	1.65
1992-93	58.36	22.60	14.10	3.08	1.86
1993-94	57.23	24.70	13.81	2.20	2.06
1994-95	55.37	23.79	15.77	3.09	1.98
1995-96	54.87	24.64	16.57	2.81	1.11
1996-97	54.59	25.49	15.85	2.70	1.37

1997-98	57.15	24.85	14.67	2.21	1.12
1998-99	55.03	28.50	13.55	1.92	1.20
1999-00	64.96	22.04	10.94	1.01	1.05
2000-01	59.97	25.42	12.22	1.19	1.20

Source.:Same as in Table 1, (computed)

Though elementary education, the priority area under education, received lion's share of total education expenditure and grew at 6.68 per cent (at 1993-94 price) more than the growth rate of education expenditure, yet it remained lower than two-thirds norms prescribed by the Education Commission (1966) and the Ramamoorthy Committee (1991). This implies that intra-sector allocation within education sector favoured secondary level education at the cost of elementary education.

The financial constraints in education have its implication on the performance of education sector in the state of Orissa.

1.2 Status of Education in Orissa

The progress in education in Orissa during 1990s is not satisfactory. The number of new schools established during this period is highly unsatisfactory (Table 3). The enrolment ratio, drop-out ratio, student-teacher ratio, per student expenditure, etc. are dismal in 2000-01 compared to 1990-91 (Table 3).

1. Literacy

Orissa ranks 24th among the 35 states/ union territories in India in terms of literacy rate in 2001. The overall literacy rate in the state increased by about 15 per centage point, from 49.09 per cent in 1991 to 63.61 per cent in 2001, while many other states could increase much faster. Besides average low literacy rate, there exists significant gender and regional disparities in the state; 50.97 per cent for female, 75.95 per cent for male; highest 80.19 per cent in Khurda district, lowest 31.26 per cent in Malkanagiri district. Moreover, as per the NFH Survey in 1998-99 only 20.8 per cent adult male population completed primary level education as against 15.8 per cent in case of female.

TABLE-3

Basic Features of Education in Orissa

Sl. No.	Features	unit	1991-92 (if otherwise not stated)	2000-01 (if otherwise not stated)
1.	Literacy rate	(%)	49.09	63.61
		(1991)	(2001)	
2.	Primary schools	(nos)	41,204	42,104
3.	Upper primary (UP) schools	(nos)	9,818	11,510
4.	Secondary schools	(nos)	4,495	6,165
5.	UP schools to primary schools rat	—	4.2	3.7
6.	Enrolment in primary schools	(lakh)	36.54	47.10
7.	Enrolment in middle schools	(lakh)	10.53	10.35
8.	Enrolment in secondary schools	(lakh)	7.79	10.83
9.	Drop-out ratio in primary schools	(%)	55.1(1993-94)	41.8
10.	Drop-out ratio in UP schools	(%)	66.2 (do)	57.0
11.	Student-teacher ratio (primary)	—	37	41
12.	do (UP)	—	28	27
13.	do (secondary')	—	19	21
14.	per student budget expenditure at current price (elementary)	(Rs) (1998-99)	531.8	1,480.9
15.	do (secondary)	(Rs)	617.3	3,182.49

Sources : Offices of various Department of Government of Orissa.

2. School Facilities

In order to improve the levels of education of population of a society, provisions of adequate and proper educational facilities are very much necessary. As per the national norms, accepted by the state government, a primary school is required to be provided in all habitants having a

minimum population of 300 and within a walking distance of one km. The norm is 200 people in case of habitants located in hilly terrain areas and if it is in case of minority population. The sixth All India Educational Survey mentioned that there were 73,148 habitations in the state of which 60,289 (82.42 per cent) habitation had primary schooling facilities, leaving 12,859 (17.58 per cent) habitants yet to be served by such facilities within one km of walking distance from the home of the child. The number of unserved habitants was highest (1,169) in Koraput district and the per centage was highest (35.40 per cent) in Rayagada district.

It is to be mentioned that only 58.92 per cent of primary schools had pucca buildings. Less than one-third of primary schools in rural areas had drinking water facilities. More than 85 per cent of school do not have any facilities for toilet

3. Pushed Out

As per the national norm, there should be an upper primary school for every two primary schools. Accordingly, in Orissa, for a total of 41,125 (36,306 primary schools and 4,819 primary sections attached to other categories of schools) institutions catering primary education in 1993, there should have been 20,563 upper primary institutions (with class vi and vii). But there are only 11,022 institutions (10,259 upper primary schools and 763 upper primary sections). This obviously shows that universalisation of elementary education will be a distant dream in Orissa unless another 9,541 institutions are established in the state for the children pushed out of the orbit of upper primary education due to lack of institutions. The ratio of number of upper primary schools to number of primary schools has remained stable at 3.7 for the last several years. Likewise 23.67 per cent of habitations and 13.68 per cent of the population were not served by secondary schools within a distance of five kms. by 1993.

4. Enrolment and Drop-out

The number of students in primary education increased by 18 times between 1947-48 and 1999-2000; in middle level education by 33 times and in secondary by 20 times. There is a decline in the gross enrolment ratio of girls after 1992-93. in 2000-01, the rate of drop-outs at primary level was 42 per cent and at upper primary level 57 per cent. Many

students repeat grades in primary schools due to prolonged absence from school and request from parents to continue their children in the same standard.

1.3 Quality of Education

Education is an important strategy of human resources development. Das Committee Report in Orissa lays special emphasis on elementary education and intends to cover three major aspects: (i) universal access and enrolment, (ii) universal retention of children upto 14 years of age, (iii) substantial improvement in the quality of education to enable all children to achieve effective level of learning.

Performance of the student depend on quality of learning which are associated with various factors such as teacher-student ratio, teacher's^ education, teacher's experience, teacher's salary, expenditure per student and facilities (quality school building, library, laboratories, etc.) (Hanushek: 1995; King and Orazen: 1999). Other factors are curriculum, instructional methodology, teachers' training programme, text books, writing materials, amount of time devoted to instruction, father's socio-economic level and socio-demographic characteristics of other students.

1.4 Equity and Government Resources for Education

In recent times, particularly in the era of liberalisation and globalisation, there is decline in the state resources on the one hand and, increase in enrolment of students and more pressing need for improvement in quality of education (Hughes and Kejariwal: 1993). There is more talk to mobilise private resources, because of resource constraints in the states particularly in a poor state like Orissa. The states have taken various steps to move towards privatisation. In Orissa, there has been a move to make some government college autonomous, revision of grant-in-code for private colleges and schools, and upward revision of fees in colleges particularly in technical colleges.

On the other hand, general state subsidies for various sectors catering to upper-income groups account for seven per cent of the gross domestic product, which is twice the total expenditure on health and education. Moreover, the share of expenditure on health and education

has been declining too. In market-related reforms in the era of liberalisation and globalisation, the government should take responsibility for creating facilities for and improving education.

Literacy and education help to improve the skill of a person. They have a large and significant impact on growth of productivity. Modern technology is easily adopted by the educated. Spread of technology depends on the earning potential and motivation that are linked to the development of formal schooling. Educational attainment and literacy have another important role in the society as they positively affect efficiency in resource allocation, leading to higher income and more equal distribution of such income. Since education has a strong impact on the individual's earnings, the net effect of the expansion of schooling has been a reduction in the dispersion of earnings and hence a more even distribution of income. However, basic and primary education has the highest impact on distribution of income, favourable to equity (Psacharopoulos: 1988). So, there is greater need for the expansion of primary and secondary education (Samal: 1997,1999). If primary and secondary education is provided under market conditions, as argued by the government in this era of liberalisation and globalisation, only those who can afford to pay tuition fees would benefit. Mot only there would be underinvestment on human capital from social point of view but income inequality too would continue from one generation to the next since education is itself a determinant of life-time income.

Hence full subsidisation of primary and secondary education is justified. The question of government withdrawing from this sector in the name of non-formal education does not arise at all. The government, instead of NGO and private sector, should take the full responsibility of primary and secondary education. Of course, the issue, in the present context of liberalisation, is whether higher education should be subsidised, to what extent and how? In a poor state like Orissa, full subsidisation of the cost of primary and secondary education must be assured before thinking of reduction of grants and subsidies to higher education in the name of privatisation of source of educational finance. Again, before withdrawing grants and subsidies to higher education, government must stop general state subsidies to other sectors.

The argument advanced in favour of privatisation are unacceptable for a poor country like India and more so in a poor state like Orissa. Of course, education is a merit good from which the community benefits to a large extent and, therefore, it is argued that the community should assume the major responsibility of financing higher education. But community involvement in education, as prevalent in USA and other advanced western countries cannot be expected in India and more so in Orissa where around half of the people live below poverty line.

Hence, state intervention in education- primary, secondary and higher-is a must in Orissa as well as in India. The relevant issue is the extent of grants and subsidies, and not the complete withdrawal of the state from the responsibility of higher education.

ALTERNATIVE SOURCES OF FINANCE AND EQUITY

If at all, there is genuine financial constraint on the part of the government, there are various other alternatives to recover the cost of higher education, without adversely affecting the equity such as (i) upward revision of tuition fees along with increase in number of students' scholarship covering fees, mess charge, clothes, text books, etc. and timely payment of the scholarship, (ii) education loan with proper steps for repayment of these loans, (iii) graduate tax, (iv) payroll tax, (v) brain drain tax, (vi) education cess, etc. (Albrecht and Ziderman: 1993; Mathew: 1996; Samal: 1982,1988,1999;Shatrugna: 1988).

However all these sources would provide only a small fraction of the total requirement of financing higher education particularly technical education in Orissa as well as in India. Hence the deficit should be filled by grants and subsidies. While giving grants and subsidies to higher education, various criteria may be taken into consideration. Reduction of subsidies for education could be considered after the withdrawal of all types of general subsidies to different sectors. More grants and subsidies to be given degree colleges in rural areas and these should be no further opening of government colleges in urban areas for a certain period, particularly in Orissa, where more than 50 government colleges are in urban centres and not a single one in rural areas. Instead of general subsidies to higher education, grants and subsidies should aim at targeting the weaker sections, as the share in public subsidies in

the total budget expenditure of the Central and State Governments is around 10 per cent (Table 2). Such expenditure on higher education as a per centage of the total education expenditure declined from 15.25 in 1981-82 to 13.03 in 1991-92 (Table 3) and the share of the total expenditure on education has been declining. The states finance more than 90 per cent of public expenditure on education. In Orissa, for example, education expenditure in absolute terms increased from Rs. 79.70 crore in 1991-92 to Rs. 158.80 crore in 1995-96 (Table 4). While its support for education is smaller than that of the States, which cover the bulk of the recurring cost under the non-Plan head, the Centre provides substantial funds in the Plan outlay.

In recent times, two conflicting phenomena have been observed, viz, (i) decline of state resources and (ii) expectation of increase in enrollment (Hughs and Kejariwal : 1993). Because of resource constraints in the states, efforts are being made to mobilize private resources. Thus there is an increasing reliance on market forces. But reduction in state financial support results in sacrifice of quality, particularly in higher and technical education. Secondly, the state is vulnerable to international donors such as the World Bank, which have begun to dictate the policy of educational finance, as in the case of DPEP in Orissa.

The states have taken various steps to move towards privatization. In Andhra, the privatization process started in the late 1980s with such steps as the revision of grant-in-aid code for schools and colleges, etc. (Shatrugna: 1986). In Orissa, for example, there has been a move to make some government colleges autonomous and revise upwards the fees of Government Engineering Colleges, for example.

State subsidies account for seven per cent of the gross domestic product, which is twice the total expenditure on health and education. Moreover, the share of expenditure on health and education has been declining too. In market-related reforms in the era of liberalization, the government should take the responsibility for creating facilities for and improving health and education (ET 1997).

There are various options for financing higher education (Mathew: 1996), viz., (i)

TABLE 3

Per centage Expenditure of Education Departments of Central and State Governments by Sectors in India

(Per centage)

Year	Eleme-ntary Edu-cation	Seco-ndary Edu-cation	Adult Edn. Spl. Edn.	Technical Edu-cation	Higher Edu-cation	Others	Total
1951-52	46.11	19.13	5.30	–	11.2	18.24	100
1961-62	39.99	20.80	4.98	–	13.25	20.99	100
1971-72	41.42	29.41	2.03	5.43	12.24	9.47	100
1981-82	43.83	32.33	0.79	4.08	15.25	3.74	100
1991-92	46.30	33.05	1.22	4.32	13.03	2.09	100

Source : Government of India : 1995

TABLE-4

Plan Non-Plan Expenditure on Education Disaggregated by Level of Education at Current Prices in Orissa

(Rs. in Crores)

Year	Elementary	Secondary	Higher	Other	Total
1990-91	244.50	108.11	63.90 (15.02)	8:01	425.52
1991-92	313.00	116.90	79.70(15.38)	8.60	518.20
1992-93	354.60	137.50	86.00(14.62)	10.20	588.30
1993-94	408.10	153.50	84.01(12.79)	11.10	656.71
1994-95(RE)	486.34	197.22	133.64(16.17)	9.12	826.32
1995-96(BE)	533.99	223.89	158.80 (17.14)	9.57	926.25

Source: (i) Government of Orissa, Finance Department; State Budget Documents.

(ii) Padi : 1996

Note : Figures in brackets show per centage to total education expenditure.

public financing (through budget provision) and public production (for example, government colleges), (ii) public financing and private production (for example, government-aided private colleges), (iii) private financing and public production (for example, XIM, Bhubaneswar) and (iv) private financing and private production (for example, self-financing private engineering colleges). Privatization of higher education, in the present context, means increasing reliance on private sources for educational finance in place of government grants and subsidies.

1. VARIOUS MEASURES TO FINANCE COST OF HIGHER EDUCATION

Of the above alternatives, public production with public control is desirable. The only problem is to find out the source of finance for higher education. There are various measures to recover the cost of higher education (Mathew: 1996).

(A) **Upward revision of tuition fees, etc.:** On the basis of the principle of 'user's charges', the tuition fee could be enhanced, though it is not the major cost of education for a student, as there are other costs, such as hostel rent, mess charge, books, transport, income foregone, etc. Along with this, on the principle of 'cross-subsidization', the number of students' scholarships could be increased to check dropping out by large sections of meritorious students, because of the upward revision of fees. Moreover, upward revision of fees could be in a phased manner. The scholarship should cover fees and mess charges in the hostels and some of the cost of books and clothes.

(B) **Education loan :** Loans could be advanced to students or their parents. But there are problems of insistence on security by lending institutions and of the risk of the failure to repay because of unemployment. It has also been observed that student loan is a disappointing instrument of recovering cost of education. Subsidies, high default rates and high administrative cost have eroded the value of repayment. (Albrecht and Ziderman: 1993). It will adversely affect middle class and poor students.

(C) **Graduate tax :** There is an alternative device to education loans for cost recovery such as graduate tax. Graduates could be made

to pay a proportion of their income for a specified period as repayment of cost of their education, on the principle of paying for education with future earnings.

(D) **Payroll tax :** Instead of graduates themselves paying the tax, the employer could pay it for the graduates employed, as they use this educated manpower (Mathew: 1996).

(E) **Brain drain tax :** The idea of taxing non-resident (skilled manpower) citizens in gaining ground. The home country has to be reimbursed for the cost incurred on the education and training of migrant skilled manpower. The advanced and developed countries should agree to share the revenue earned by them from the incomes of the citizens of developing nations, through coordination of the tax administrations of the host and home countries (Samal: 1982).

(F) **Education cess :** Education cess is a levy payable by all members in a community/region or group irrespective of participation in higher education. Generally a cess is imposed as a small fraction of some other already existing tax, • such as corporate tax, excise, sales tax or income tax. In Orissa, it is feasible to collect cess from industries, for example, from RSP for Sundargarh district, from NALCO for undivided Dhenkanal district and so on.

(G) **Selection of teacher, students and quality of courses :** Teachers should be selected on such criteria that the institutions in which they serve get more grants from funding agencies like the UGC. For instance, UGC grants are tied to some specific academic standards. UGC norms should be taken into account while selecting teachers by an institution. For instance, grants arc available on the basis of major research projects undertaken or publications in leading all-India journals. So, the selection should be made on this basis too, along with teaching ability. During the interview, the candidates could be asked to take a few classes in the concerned class. But selection on the basis of wrong criteria, such as production of Ph.D. candidates for selection of professor, as in Orissa, is not appropriate. Enrollment

of students to higher education should be only on the basis of exceptional merit. Others could go for distant education or vocational education.

All these sources provide only a small fraction of the total requirement of financing higher education in developing countries like India. Finance from these sources is possible in USA or in advanced western countries where the net income of some of their multinational corporations are far higher than the GDP of some of the developing countries. Even in the most advanced countries, such as USA and western European countries, universities get grants from government. Thus, the deficit should be filled by grants and subsidies.

2. SUITABLE CRITERIA FOR GRANTS AND SUBSIDIES

While giving grants and subsidies to higher education in a poor country like India the following criteria could be taken into consideration:

(A) **General subsidies :** Reduction of subsidies for education could be considered only after the withdrawal of all types of general subsidies to different sectors which

TABLE-5

Rate of Return to Education in India

(Per cent)

Year	Primary	Social Secondary	Higher	Primary	Private Secondary	Higher
1995	13.14	16.5	10.3	17.3	18.8	16.2
1978	29.3	13.7	10.8	33.4	19.8	13.2

Source :Tilak: 1994.

constitute around seven per cent of GDP of India and serve the upper segments of the society.

(B) **Rural :** More grants and subsidies to degree colleges in rural areas and no further opening of government colleges in urban areas for a certain period, particularly in Orissa, where more than 50 government colleges are in the urban centres alone and not a single one in rural areas.

(C) **Informal education and training :** Since employment in the informal sector is far higher than in the formal sector, grants and subsidies for informal education and training (for example, on-the-job training of apprentices) should be taken into account while subsidizing higher education.

(D) **Targeting :** Instead of general subsidies to higher education, grants and subsidies should aim at targeting the economically weaker sections, as the share in public subsidies in education is not progressive, that is, not proportionately higher for students in the lower socio-economic group (Jimenez: 1986).

(E) **Differential prices :** Traditional low and uniform price policy for education should be replaced by policies that differentiate prices by types of consumers (Jimenez: 1989), such as higher fees for science, medical, engineering compared to the arts stream.

Literacy and education help to improve the skill of a person. They have a large and significant impact on the growth of productivity. Modern technology is easily adopted by the educated. Spread of technology depends on the earning potential and motivation that are linked to the development of formal schooling. However, the rate of return is the highest in primary education, followed by secondary and then university education. In India, the social rate of return is 29.3 per cent in primary education compared 10.8 per cent in university-level education (Table 5).

Educational attainment and literacy positively affect efficiency in resource allocation, leading to higher income and more equal distribution of such income. Since education has a strong impact on the individual's earnings, the net effect of the expansion of schooling has been a reduction in the dispersion of earnings and hence a more even distribution of income. However, the equity effect depends on the level of expansion of schooling. Basic and primary education has the highest impact on distribution of income, favourable to equity, while the equity-impact of expansion of post-graduation may equally be negative (Psacharopoulos: 1988). So, there is greater need for the expansion of primary and secondary education (Samal: 1997). If primary and secondary education is provided under market conditions, only those

who can afford to pay tuition fees would benefit. Not only would there be underinvestment on human capital from the social point of view but income inequalities too would continue from one generation to the next, since education is itself a determinant of life-time income (Psacharopoulos and Woodhall: 1995).

Hence, full subsidization of primary and secondary education is justified, but the issue, in the present context, is whether higher education should be subsidized, to what extent and how? In a poor country like India, full subsidization of the cost of primary and secondary education must be assured before thinking of reduction of grants and subsidies to higher education in the name of privatisation of sources of educational finance. But privatization being a world-wide phenomenon, India cannot escape global influences. However, the argument advanced in favour of privatization of higher education by the World Bank or the Government of India are unacceptable for a poor country like India (Samal: 1988). Of course, education is a merit-good from which the community benefits to a large extent and, therefore, theoretically, the community (either ex-students, wealthy philanthropists, private industry, etc.) should assume the major responsibility of financing higher education. But community involvement in higher education, as prevalent in USA and other advanced western countries cannot be expected in a poor country like India and more so in a poor state like Orissa, for example, where around 36 per cent and 49 per cent of people respectively live below the poverty line.

Hence, state intervention in higher education is a must in India. The relevant issue at present is the extent of grants and subsidies and not the complete withdrawal of the state from the responsibility of higher education by surrendering to the private sector and so-called self-financing colleges working for profit, which would conflict with the welfare as well as the development roles of the state.

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Equity In Higher Education

Sanjukta Das
Reader in Economics
Sambalpur University, Jyoti Vihar

INTRODUCTION :

Higher education consists of all post-HSC general and technical education. Thus, B.A., B.Sc., B.Com., all technical degrees, P. G. degrees, (both technical and general), Ph.D., Post Doc., etc., are under the umbrella of higher education or tertiary education. It is an important segment of human capital formation of the economy. Higher educated people are the productive assets and they help in income generation or in the increase of GDP of the country and GSDP of the state. Government spends and is expected to spend a significant proportion of it to achieve higher economic growth. Education is subsidized as it has huge externality for which Musgrave categorises it as a merit good. But some important questions are associated with it for achieving efficiency, equity and optimality. These are:

What is the share of public funds invested in higher education ? Who gets higher education ? What is the amount of subsidy in education and higher education and to what extent higher education is a merit good in the context of brain drain, growing unemployment and growing and effectively competing private sector ? This paper makes a modest attempt to deal with some aspects of these questions.

HIGHER EDUCATION IN THE COUNTRY AND IN THE STATES :

Expenditure on education in the country during 1981-2001 constituted 3.5-4.0%. Higher education accounted for 15.6% of the total educational spending in 1981-91, which declined to 9. 77-10.97 % in the nineties. However, expenditure on higher education as per cent of GDP is rising over the period (from 0.34 in 1981-91 to 0.60 in 2000-01). State governments also spend on education, education being in the concurrent list. Among the states, in 1996-97, Delhi spent 31.12% (highest) of its budget on education while Sikkim spent 5.55% (lowest). Orissa was spending 23.76% of its budget on education. Within the education sector inter-sector allocation varies from state to state. Delhi

was spending 2.28% on higher education and 6.41% on technical education while Andhra Pradesh's allocations for the same were 19.84 and 2.87%. In this case also Orissa was an intermediate state with allocations of 14.70% and 3.06% for those sectors. The gross enrolment ratio in higher education is approximately 7 per cent in India which is higher than the developing countries on average, but lower than that of Asia (11%), and much lower than the OECD countries (Kapur and Mehta, 2004). In the eastern region of the country and specially in Orissa the ratio is low. In fact, less than 2 per cent people of Orissa were higher educated in 1991 (Female : 0.76%). In 2002-03 Orissa had 345113 students in higher education of which women's share was 35.69% (UGC). According to MHRD, GOI, in 1997-98 there were 5654 thousand students at graduation and above level which accounted for 3.07% of the total students. Among the states, Manipur was with highest per centage (7.93%) and Maharashtra at the bottom (0.73%). Orissa had 2.16% students in higher education at that time thus occupying an intermediate position. Female graduates constituted lower per centage of the total compared to male both in the country and in majority of the states. Exceptions are Meghalaya and Tripura where both in number and per cent females are ahead of males. In Orissa females lag behind males. Streamwise 2/3rd students are found in arts and science streams, commerce and management have 20%; the rest belongs to technical degrees. This implies that still higher education (HE) is in the State's domain (as general arts, science department are not privatised). But there is growing privatization of the HE in the country as well as in Orissa. The spending of the govt. on HE per pupil is declining during the last two decades even if the total expenditure is rising over time (Tilak, 1997). Privatisation is more in technical education like engineering and medical. Out of the total 198 medical colleges 44% were private and out of 1202 engineering colleges in the country 84.03% were in private sector in 2003 (Medical Council of India and AICTE). Privatisation is highest in Andhra (>90%) and zero in Assam. In Orissa, 86.36% engineering colleges are private while all (3) medical colleges are govt. ones.

EQUITY IN HIGHER EDUCATION :

Now, with the advancement of the economy on the path of industrialisation, globalisation marketisation and efficiency, private demand for such goods like education is increased. People are ready to

pay for these goods when they are combined with personal care and thus being differentiated from general services provided by the Government. But majority of the poor can't avail such facilities because of lack of income and information. They are sending their children to the Government or private schools of traditional type where no personal care is taken and parents are very often forced to spend much on private tuition. This results in the difference of quality of education received by the rich and the poor. Outcome is the difference in performance and achievement. The process which starts at the primary school level continues and accumulates at the higher stages resulting in inequity in human capital formation.

TECHNICAL EDUCATION :

At the tertiary level also institutions vary in quality. Internationally acclaimed institutions like IIM, IIT etc., with good infrastructure exist along with general private colleges in the rural areas. Very few from the weaker sections are found in these good institutions. With a view to mainstreaming of the weaker section in higher education and specially technical education quota are introduced. But people availing of such quota come mainly from the creamy layer among the backward castes, (who constitute the weaker section). The second generation learners of these people avail of such advantage. Moreover, there is very often marked difference in the performance of the quota, non-quota students.

A new development is taking place during the last few years in the state. A number of private Engineering Colleges have been set up in the state with the provision for free along with paid seats. We had 38 private and 6 government engineering colleges in 2003 (Medical Council of India and AICTE). Thus, the total engineering seats have increased manifolds. Various good companies are coming to the engineering college campuses for campus interviews and many are getting the placements. In this age of liberalisation and globalisation majority of these engineering students because of their hard work and dedication are getting high salaried employment opportunities. Thus, entering into a technical line has become a craze now. The private demand for such type of education has increased very much. Accordingly, private sector has emerged to cater this. A number of coaching institutions with residential facilities have emerged to provide coaching only for the entrance examinations. Most of the (even) lower middle-class, upper middle class and upper class parents of +2 science pass students are

sending their children to such coaching institutes for one or two years meeting huge expenses. Moreover they are also very often spending a lot in admitting their wards in such technical institutions under payment seats (even by incurring loans) with the hope of getting good salaried jobs. The poor households are not able to compete in such race and lagging behind.

Another matter of serious concern is: those lower middle class who are also taking the risk with an objective of reaping higher gain are they really capable enough to bear the risk ? Generally it is observed that poor farmers or poor households don't go for risky ventures whether it is HYV crops or mono-cropping of permanent nature as they are incapable of doing so. Here the standard measure of expected return = $\bar{x} + \delta$ or $\pm 3\delta$ indicates the probability of occurrences of an event. Any investment is worth taking if expected rate of return is higher than the required rate of return (which includes risk free return + risk premium). Now the question is: Is this type of calculation taking place in case of investment in children's education of such type ?

We are adopting liberalisation, globalisation and privatisation policy to improve efficiency, increase economic growth and standard of living along with the reduction of poverty by promoting competition, giving more freedom, etc. Freely competitive economy is considered to be Pareto optimal as it maximizes consumer's satisfaction, producer's profit and optimizes overall resource allocation. All these are true but since the factors of production are unequally distributed it may not bring optimality and market economy has the inherent tendency of raising inequality as factor rewards are based on marginal productivity which is high when a factor is scarce. Thus, some sort of redistribution function of the Government is required which Musgrave categorises as the 'distribution function' of the Government. But the reality of our so called liberalised economy is: (1) the existence of asymmetric information, (2) large selling cost in the form of advertising and (3) overall not the perfect competition as such, rather monopolistic competition or oligopolistic competition. The so called private technical institutions spend huge amount in advertisement and glamourize their outcome without giving proper or real information.

There is no manpower planning. Technical institutions are set up (are allowed to set up) without estimating the requirement of such technical personnel. Therefore very often poor students take admission

in anticipation of lucrative jobs by borrowing money form banks or other financial institutions. After passing the examination, if they do not get jobs or get jobs which give lower salary they face acute trouble. No remedy for them. It is necesasry there should be some regulation to control such private institutions which attract students by giving false allurements in order to ensure equity in higher education. How to prevent such crisis while promoting efficiency and building human capital stock– is really a big and valid question before us.

GENERAL EDUCATION :

In these days of liberalisation and globalisation with more emphasis on industrialisation and technological advancement and specially with the growth of information technology (IT), a major portion of meritorious students (specially among the boys) are not coming to the general education in Orissa as it is in the country as a whole. So, only the less meritorious students and children of poor households come for general education. There is declining scope of job opportunities for these students undertaking general education. Again in the general education, a number of self-financing courses like MBA, MCA, MFC, etc. are flourishing where the probability of job opportunity is higher compared to others. These are charging very high fees. The poor households are not able to make such huge investments. Of course, some of the lower middle class households are investing in such ventures without knowing the real expected average earning. Thus the economy is operating in a very uncertain environment. There is liberlisation and less restrictions (and also less obligation), increased opportunities (but with rising cost and not efficiency in that sense), increased insecurity without insurance facility and selective information (to misguide the people). There is increased scope for the rich to have better employment opportunities (whether wage employment or self-employment) and less opportunities for the poor, (the possibilities of these educated youth of the poor households entering various types of criminal activities can not be denied. The increased crime rate, bandh rate and terrorist activities are to some extent the manifestation of the Government's institutional; failure in providing or creating employment. This trend is expected to increase. The youth of the lower middle class households who are

investing in such type of human capital formation, estimating a very high rate of return (without proper assessment due to the absence of required information) and undertaking large risk, but not getting good job (and such return) will not only feel simply depressed but very often develop suicidal tendency or revolt against the system or join in some unethical, illegal activities like computer hacking, internet crime etc.

CONCLUSION :

In this changed scenario, the role of the welfare state needs to be properly identified. Adopting liberalization, privatization and globalization the state should not sit idle adopting a laissez-faire policy. The state should assure its new and very big responsibility in this liberalised era to create right institutions for the prevention of such things and to provide right information, insurance facility and enforcing various prudential norms for such parties and prevent such high level of inequity in the society. If state will not do so, the system will ultimately bring it, but with much human and material cost (with much bloodshed and destruction). So it is better not to sit and watch rather to act from the beginning.

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Some Aspects of Expenditure on Higher Education in Orissa

Sadhana Satapathy
Department of Economics
Dhenkanal Mahila Mahavidyalaya

INTRODUCTION

The importance of education in promoting broad-based economic development is a well-known fact. Though the emphasis of policy makers is mostly on primary education, the importance of higher education can not be ignored. Higher education (HE) in India starts after senior secondary education comprising three stages i.e. (a) graduate (b) postgraduate (c) research/doctorate degree. Vocational/technical/ professional education starts at the school level and is followed by courses up to graduation, post graduation and research.

Unlike primary education, health care or similar basic needs, HE in general is not a matter of right. This is more so in the case of a poor country like India. The same logic applies to Orissa where the priorities are avowedly in favour of basic needs. However, HE's role as nurturing the intellectual vanguard and the task of thinking and opinion making class on behalf of the society cannot be undermined. It is another matter whether HE is really producing qualitative people or merely producing more quantity of educated youth who do not find appropriate employment which has to be looked into separately.

There are certain characteristics of HE which are unique to it. By its very nature, it is a selective field. It is not a universal human resource. On the other hand, given the kind of social prestige and upward mobility which is associated with HE based professions, there will always be an increasing number of aspirants. More will want to get in than that can be accommodated. It is one of the most important avenues of mobility of all classes including the affluent class in every society in general and in a big and developing country like India in particular.

Given the above characteristics of HE and the resource crunch, it is obvious that expenditure on HE Particularly public expenditure, is a debatable issue. However, financing by government is a major instrument for its development. Govt. of India has classified education beyond

elementary level i.e. secondary and HE as non-merit goods or merit-2 goods. These are at the lowest rung of receiving public subsidies. State govts are responsible for providing establishments of state universities and colleges. State provide plan grants for development and non-plan grants for maintenance of HE institutions.

The present paper makes a modest attempt to provide largely descriptive account of various aspects of expenditure on HE in Orissa. Section II deals with trends in expenditure on HE in India as well as i Orissa. Section III deals with subsidies and related problems. Section IV provides a comparative account of Orissa vis a vis India and section V offers some concluding observations.

(I) PUBLIC EXPENDITURE ON HE IN INDIA :

As far as funding is concerned public funding in HE is not only low but also its allocation is skewed. Majority of central govt funds goes to around 130 out of 1,80,00 institutions across the country while the rest are either not funded allocated small amount. Expenditure as a per centage of GDP has remained stagnant at 0.37% over the last few years. It is very less compared to that of U.S, U.K and China which are 1.41%, 1.07% and 0.51% respectively. In India expenditure has been decreasing over time in general and over the last fifteen years of reforms era in particular.

TABLE-1

Expenditure on Higher Education in India as a % of GNP, as % of Total Expenditure and Growth in per student Expenditure

Years	% of GNP	% of Total Expenditure			Annual rate of growth of per student expenditure
		Plan	Non-Plan	Total	
1990-91	0.49	7.5	12.00	11.3	–
91-92	0.45	7.1	11.6	10.8	–12.4
92-93	0.44	6.7	11.6	10.8	–0.3

93-94	0.40	6.0	12.1	11.0	0.4
94-95	0.39	8.0	11.5	10.8	–0.8
95-96	0.37	6.1	11.3	10.1	–13.1
96-97	0.35	5.0	11.2	9.8	–3.3
97-98	0.35	9.2	12.4	11.8	1.3
98-99	0.39	7.9	12.8	11.9	13.3
1999-2000RE	0.47	7.6	13.7	12.7	7.3

Source : Analysis of Budget Expenditure on Education (various years), Ministry of Human Resource Development, New Delhi. (cited in Tilak, 2004)

Growth of public expenditure on HE has not been impressive if one examines expenditure in real prices and in per student terms. The growth has also not been smooth across the last five decades (Tilak, 1995a). Public expenditure on education as a % of GNP has been far too below the national target of spending 6% and has indeed declined to about 3.9% in 1998-99. From Table-I, we can see that as per centage of total expenditure, the share of H.E has remained more or less stagnant. It is only since 1997-98 that there has occurred an increase in the share of public expenditure on HE. On the other hand total student enrolment in higher educational institutions in India has been increasing rapidly over the past half century from 2,00,000 in 1950s to almost seven million by the end of 2000. As the number of students are increasing (based on the enrolment records), it has led to a decline in the per student expenditure. Per student expenditure in higher education has declined in real prices, the index falling from 100 in 1990-91 to 84 in 1998-99 (Tilak, 2004) Annual growth rate of per student expenditure has been negative in almost all the years till 1996-97. From 1997-98 onwards, the growth rate has been positive and high. The relative priority accorded to higher education has drastically come down. Similarly, in five year plans, the share of higher education has come down from 18% in 6th five year plan to 7% in 8th five year plan. The outlay on higher education in 9th plan forms 10% of total educational expenditure.

The steep decline has more to do with resource scarcity experienced by the govt rather than a belief that higher education is not important.

II) TREND IN PUBLIC EXPENDITURE ON HIGHER EDUCATION IN ORISSA :

Just like at the national level, public expenditure in higher education is not very high in case of Orissa. As a per centage of total expenditure as well as a per centage of GSDP, it has occupied a position of least importance. If we go through the expenditure pattern of educational outlay for various years (see Table-2) we find that the share of higher education in total expenditure on education has not been much higher than it was during the first half of nineties. It was stagnant till 97-98 and has declined thereafter though there has been some recovery since 2000-2001. Similarly, the hare of HE as a per centage of GSDP has been around 0.5% except in 2001-2002 (.77%).

Assuming that the share of higher education component in technical education (technical education includes higher secondary courses such as diploma courses as well as degree courses such as engineering and medical courses) has not gone down, the declining trend in technical education would suggest a decline in the share of higher education expenditure as per cent of GSDP as well as a per centage of total expenditure on education. What we observe from Table 2 is that just like at the national level, the public expenditure on higher education as a % of GSDP has remained stagnant. The marginal decline in the expenditure trend in technical education from 1 997-98 onwards perhaps indicates the increasing role of private institutions in the field of technical education (higher) and the recent growth of private engineering and medical

colleges in the state is an example of this. Regarding per student expenditure on higher education, unfortunately we couldn't collect data.

TABLE-2

Public Expenditure on Higher Education in Orissa as per centage of total expenditure and as a per centage of GSDP

Sl. No.	Year	Share in total expenditure on Education		% of GSDP	
		University and Higher	Technical	University and Higher	Technical
1	1990-91	14.40	3.87	0.56	0.15
2	1991-92	15.04	3.16	0.56	0.11
3	1992-93	14.10	3.08	0.54	0.12
4	1993-94	13.81	2.20	0.51	0.08
5	1994-95	15.77	3.10	0.58	0.11
6	1995-96	16.57	2.81	0.57	0.10
7	1996-97	15.19	2.70	0.61	0.11
8	1997-98	14.67	2.21	0.54	0.08
9	1998-99	13.65	1.92	0.55	0.08
10	1999-00	10.95	1.01	0.54	0.05
11	2000-01	12,22	1.19	0.55	0.05
12	2001-02	18.54	1.10	0.77	0.05
13	2002-03	14.06	1.26	0.60	0.05
14	2003-04	14.12	1.21	0.49	0.04
15	2004-05	15.27	1.11	0.51	0.04

Source : Government of Orissa, White paper on Orissa State Finances, March 29th, 2004, Finance Department.

due to time constraint but nevertheless, assuming enrolment has increased (due to increasing population) and expenditure has remained stagnant, per student expenditure must be declining as has been the case at national level.

Interestingly, if we compare Orissa with that of national figures we find that the former is always marginally higher than the levels of national (Tables 1 &2) expenditure on HE. Thus, Orissa is not behind the national average as far as expenditure on higher education is concerned.

III. SUBSIDIES ON HIGHER EDUCATION

The unanimous understanding among economists that investment in human capital yields as much return- if not higher – than returns on

investment in physical capital has been one important reason for the deep interest that researchers have shown since 1960s in educational finance But at the same time, investment should be efficiently utilized. For example, institutes of higher education are expected to possess facilities by way of basic infrastructure such as class rooms, libraries, laboratories hostels and technical and research inputs which do not yield any instant return. There are other recurring costs which are maintenance costs, e.g., conducting exams, giving subsidies in terms of scholarships to the students, games and sports etc. There are also direct private cost associated with higher education which is defined as the value of the money directly incurred by households for the education of students such as private tuition fees, stationery, hostel etc. These are determined by socio-economic conditions such as income and occupation of the people Thus, pattern of expenditure, efficiency of resource allocation and cost effectiveness of educational expenditure are seen to be the areas of recent research concerns particularly in the last three decades.

Higher education is heavily subsidized by the state in almost all the countries of the world. Financial assistance by the state is provided in the form of block grants development grants and special development grants.

Subsidies in education are advocated on the grounds of providing equality of opportunity. But some argue against subsidies particularly in higher education because a significant portion of subsidies in higher education is appropriated by middle to high income groups while some others do not favour reduction in public subsidies; they nevertheless suggest increase in cost recovery rates and several ways of mobilizing non-governmental resources [UGC 1993, AICTE 1993].

Subsidies can be implicit in the form of concessions in tariffs and taxes or explicit in the form of transfer payments. There has been a misconception that higher education in India is heavily subsidized by the state unlike in other developed /developing countries and that student do not pay any significant amount of fees. But it may not be true.

Government expenditure on scholarships in higher education according to 2000-01 BE was Rs. 16.00 crore (at 1993-94 prices) which is 0.35% of expenditure on higher education. It was 0.59% in 1989-90. The per centage has gradually been decreasing. It has now become very insignificant. Similarly, so far as budget assistance to private

educational institutions in higher education is concerned, nearly 48.1% of budget assistance to higher education goes to private institutions (2000-01 BE) whereas it is 20% in elementary and 19.4% in technical. It implies that there is a large private sector in higher education which receives state support which is more than 45%. This has remained steady from 1990-91 onwards (45%). (Tilak 2004)

Absolute amount of subsidies in higher education – total and per student in real prices, as well as relative proportions – shares in GNP and total expenditure on education have declined drastically. Subsidies in the form of scholarships are rather small and subsidies to private colleges are relatively high.

The explicit subsidies provided in the state of Orissa govt. budget under non-plan and all plans taken together varies from 0.62% to 0.29% GSDP. Explicit subsidy is not as high as implicit subsidy or hidden subsidy (in the form of concessions in tariffs and taxes ranging from provision of land at concessional prices to tax exemptions/concessions).

TABLE-3

Implicit Subsidies on Higher and Technical Education in Orissa, 1992-2000

Years	Implicit Subsidy on Higher and technical education as % of GSDP
92-93	0.62
93-94	0.53
94-95	0.62
95-96	0.61
96-97	0.66
97-98	0.57
98-99	0.63
99-2000	0.43

Source :Govt of Orissa, White Paper on Orissa State Finances. March 29th, 2004, Finance Dept, Annexure-10

TABLE-4

Grant in Aid (GIA) to Higher Education in Orissa, 1980-2001.

YEARS	GIA to HE as a % of GSDP	GIA to HE as a % of total GIA on education	YEARS	GIA to HE as a % of GSDP	GIA to HE as % of total GIA on education
1980-81	0.19	9.27	1992-93	0.30	29.49
81-82	0.20	9.53	93-94	0.26	27.53
82-83	0.20	8.48	94-95	0.33	31.26
83-84	0.18	8.56	95-96	0.36	33.61
84-85	0.20	8.50	96-97	0.38	49.34
85-86	0.23	12.42	97-98	0.33	66.86
86-87	0.24	9.11	98		
87-88	0.16	6.30	-99	0.33	60.59
88-89	0.16	8.27	1999		
89-90	0.27	13.13	-2000	0.25	60.94
90-91	0.29	21.27	2000		
91-92	0.29	16.51	-2001	0.37	69.06

Source : Govt of Orissa, White Paper on Orissa State Finances, March 29th 2004, Finance Dept, Annexure-10.

Tables-3 and 4 provides data on implicit subsidies and grants in aid to HE in Orissa for various years. Implicit subsidies are varying from 0.43% to 0.66% and have remained more or less steady. Similarly, on an average, GIA to HE as a per centage of GSDP for the post-'90s period has been around 0.33%. If we compare this figure with that of 1981-82 to 1991-92, we find that in the pre-'90s period, it was on an average only 0.22%. Grant in aid to HE as a per centage of total GIA to education sector has been steadily increasing and has reached almost 70%. If we compare this figure with that of 1980-81 to 1991-92, we find that the per centage for the above mentioned period varied from 8% to 21%. It was below 10% upto 1980-81 except in 1985-86. Intrasectorally, up to 1889-90, GIA to primary education as a per centage of total GIA to education sector was the highest. For the period 1990-91 to 96-97 the per centage was highest for secondary education. Since

1997-98 up till now, the share of GIA to HE as a per centage of total GIA to educational sector has been the highest. Thus in post-'90s period, a big chunk of grant-in-aid comes to higher education in comparison to primary education and secondary education.

TABLE-5

Implicit Subsidies to Higher and Technical Education

(Rs. in Crores)

Years	Higher Education (crores)		Technical education (crores)	
	Expenditure	Recovery	Expenditure	Recovery
92-93	86.15	0.82	17.99	0.18
96-97	159.97	0.04	28.54	0.63
97-98	174.24	0.0	26.11	0.67
98-99	193.95	1.01	43.52	0.64
99-2000	187.61	1.50	17.88	0.53
2000-01	260.34	1.57	31.18	0.59

N.B. : Non plan and Plan figures under Revenue Account have been taken into account in the above calculation.

Source : Government of Orissa, White Paper on Orissa State Finances, March 29th, 2004, Finance Dept.

If we look at cost recovery side, we find that the extent of recovery is quite insignificant (Table-5). Education is currently provided free for secondary education while fees for tertiary education are no comprehensive and are set at very low level. The general fees which were revised during 1951-52 have not been revised even after 48 years. For example, the expenditure on higher education during 1998-99 was Rs.193.95 cr but the receipt was only Rs. 1.01 cr. It was Rs. 260.34 cr as against the receipt of Rs. 1.57 cr in 2000-01. In the case of technical education though fees have been revised in 1998-99 (valid for 3 yrs. up to 2000-01) the receipt from technical education was Rs. 0.64 cr during 1998-99 as against an expenditure of Rs. 43.42 cr.

Tilak argues that there has been a misconception that higher education in India is heavily subsidized by the state, unlike other developed/developing countries and that students do not pay an significant amount of fees. Some studies (Rao & Mundle 92, Srivastav

and Sen 1997) have reported very high rates of subsidization and insignificant rates of cost recovery (1.46%). But these estimates are based on budget documents of the govt. of India and of the states (dept/ Ministry of Finance) both for data on revenue receipts and expenditure. Generally, only the tuition fees are credited into the treasury, while the students pay a variety of fees. Tuition fees are only a small part of the total fees paid by them. Expenditure also includes only budgetary expenditure. If these factors are taken into account, then rate of cost recovery in the case of HE was above 20% in 1977-78 (Tilak, 2004 p350). In fact, it has been found in a recent study (Tilak, ibid p352, fig5) that out of 39 selected universities, for as many as 13 universities, the cost recovery was more than 30% and more than 40% for seven universities. Appropriate data base for calculation of subsidies and cost recoveries, according to Tilak, is the data provided by Dept of Education, Ministry of HRD etc. but not the budget documents.

III. CONCLUDING REMARKS

From the above, it is possible to say that there has been a relative squeeze on state expenditure on higher education. This is likely to have affected the quality of higher education in most cases. Better cost recovery through revision of tuition fees is not a viable option nor can it be justified without bringing about visible improvements in the quality of higher education. Also, there has to be a significant expansion of employment opportunities for the educated youth through adequate and appropriate investments. We may suggest that an alternative option can then be highly subsidized educational loans with less stringent norms of repayment to improve their availability from public financial institutions. Accountability of both teachers and students through appropriate reforms of higher education could be pursued for introducing a more rational policy of financing higher education in Orissa.

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Higher Education in Orissa : The Challenges Ahead, Some Policy Implications

Dr. Satyabrata Mishra
Deptt. of Economics
M.P.C. (A) College
Takhatpur, Baripada

INTRODUCTION :

The Indian higher education system is presently facing cumbersome tasks. The challenge of global competitiveness has been added to other daunting tasks such as access, equity relevance, quality, privatization and internalization amidst resource crunch, education contributes significantly to economic development. Individuals with higher education have an edge, over their counterparts. The developing countries embark on both quantitative and qualitative expansion of higher education. The planning strategy in India was geared towards ensuring distributive justice, balanced regional growth and positive discrimination in favour of vulnerable sections.

The present paper makes an endeavour to examine the key educational parameters of the state, challenges ahead and policy paradigm to resolve the impasse.

Since independence the number of colleges and universities has registered a significant hike. From 1950 - 51 to 2005 - 06, the number of Universities has increased from 28 to 348, number of colleges has gone up from 578 to 17625. Enrolment in higher education has registered a steep hike from 0.174 million to 10.48 million. The number of teachers has also gone up from 24 thousand in 1950 - 51 to 4.72 lakhs in 2005 - 06. Universities and colleges have grown at an average annual growth rate of 4.94% and 6.66% respectively. As on 31st March, 2006 the country had 20 central universities, 217 state universities, 102 deemed universities, 10 private universities, 13 institutions of national importance and five institutions established under State Legislature Act (UGC – 2006). From March 2002 to March 2006 Central and State Universities

have grown by 11% and 22% respectively and the deemed universities have grown by 96% fourteen States and Union territories have much higher level of access to higher education compared to national average 12.17 in terms of the number of institutions available per lakh population in the age group of 18-23 in 2003-04. The Indian system of higher education is the largest in the world in terms of the number of institutions. India has 17973 institutions of higher learning as against 2500 in China. The number of institutions in India is more than 4 times the total number of institutions both in US and Europe. The total enrolment in the higher education system excluding distance education has increased from 0.17 million in 1950 - 51 to 10.48 million in 2004-05. During the period 1950-51 and 2004-05 total enrolment at higher education level has increased at an average annual growth rate of 8.04%, the growth rate in total number of teachers has been 5.78%. About 87% of students in the higher education system are enrolled in the affiliated colleges. In fact more than 90% of graduate and 65% of post graduate students are enrolled in affiliated colleges. Only 0.65% of students in higher education institutions are engaged in research. There is a broad positive correlation between the Gross Enrolment Rates at the higher education level and the per capita GDP of a nation. Considering the demand for higher education, the GER in India relative to many of the developed countries is quite low i.e. only 12% compared to the average of 13% of the developing countries, 26.7% of world average and 57.7% of developed countries. Although the overall demand for higher education in India is increasing, there are wide variations in GER across States and Union Territories. The GER at the higher education level is as low as 4.33% in Nagland and as high as 28.68% in Chandigarh.

In the context of Orissa at the time of independence there was only one University in the state to cater to the needs of university education. Total number of colleges were only 12 with an enrolment of 4104. But in 2005 - 06 9 Universities are functioning in the state. Fresh initiative has been launched for the establishment of National Law University. By the end of 2005 - 06 96 Govt. colleges and 488 aided colleges are functioning in the state. Out of these, 49 were Jr. Govt. Colleges and 233 were +2 aided colleges. 153 Sanskrit Colleges

comprising 3 Govt. Colleges and 22 Aided Sanskrit Colleges were functioning in the state. Besides 34 Law Colleges were also functioning in the state out of which 4 were Govt. Law Colleges. Post Graduate courses are provided in 25 Govt. Colleges and autonomous status has been conferred on 20 Govt. colleges and 6 Non - Govt. aided colleges. Out of which UGC have identified Ravenshaw College, Cuttack, Govt. College, Bhawanipatna and GM College, Sambalpur as centres of potential excellence for which they are entitled to special financial assistance from UGC.

Universities and autonomous colleges play a vital role for promoting academic excellence in the field of higher education. National Assessment and Accreditation Council (NAAC) an autonomous institution of UGC is working on continuous quality maintenance in educational institutions by the process of Assessment and Accreditation. The Department of Higher Education with the financial assistance of NAAC had organized cluster orientation programme on NAAC accreditation in 6 Autonomous Colleges during 2004 - 05. As a result about 51 colleges were accredited during February 2006. NAAC have so far accredited three universities i.e. Utkal, Sambalpur and Berhampur and 67 other colleges in the state.

Age groups of 18-23 entering higher education are : US-80%, Finland-74%, UK-52% and other advanced countries having more than 50% of this whereas in India only 7% belong to this category which must be at least 25% by 2020.

Proportion of GNP/NSDP on Education :

In conformity with 1986 NPE India had committed to allocate 6% of GNP to education. The proportion of GNP allocated to education (revenue and capital accounts) has grown from a very low level of 0.67% in 1951-52 to reach the all time high of 4.4% in 2000 - 01. Then it declined sharply to 3.54% in 2004 - 05. The priority accorded to education consistently declined since 1990 with the exception of 2000 - 01. The proportion of GNP allocated to higher education has sharply declined from 0.46% in 1990 - 91 to 0.34% in 2004 - 05. The proportion of outlay in higher education to total budgetary outlay declined from 1.58% in 1990 - 91 to 1.18% in 2004 - 05.

Expenditure on Higher Education in Orissa

(Rs. in Crore)

Year	Non Plan	State Plan	Central Plan	CSP	Total Plan	Grand Total
2003-04	210.09	63.65	0.25	0.96	64.86	274.96
2004-05	222.64	85.73	0.31	0.76	86.79	309.43
2005-06	238.09	106.95	2.59	1.52	111.06	349.15
2006-07	281.65	89.36	1.28	0.84	91.47	373.13

Source : Orissa Budget At a Glance - 2005 - 06, 2006 - 07.

The above table reveals that Non-plan expenditure on higher education increased from Rs.210.09 cr. to Rs.281.65 cr. from 2003-04 to 2006-07. Plan expenditure on higher education has increased from Rs.64.86 cr. to Rs.91.47 cr. for the corresponding period. Total expenditure on higher education in Orissa increased from Rs.274.96 cr. to Rs.373.13 cr. for the period 2003-04 to 2006-07.

The following table depicts schematic break up of revenue and capital account expenditure on higher education.

(Rs. in Cr.)

Year	Revenue Exp. on Higher Education	Total Exp. on H.E. (Rev. Capital)	HE Exp. As % of NSDP	Total Exp. on Edn.	H.E. Exp.as % of total Exp. on Edn.	H.E. Exp.as % of total Budget-ary
1	2	3	4	5	6	7
2002-03	271.04	271.63	1.26	1850.73	14.68	2.45
2003-04	264.15	264.15	1.05	1848.97	14.29	2.25
2004-05	309.43	309.43	1.12	1956.78	15.81	2.30
2005-06	349.15	349.15	1.22	2286.95	15.27	2.22
2006-07	373.13	373.13	–	2335..31	15.98	2.14

Source : Orissa Budget at a Glance: 2005 - 06, 2006 - 07.

The above table reveals that revenue and capital account expenditure on higher education increased from Rs. 271.63 cr. to Rs. 373.13 cr. for the period 2002-03 to 2006-07. Total expenditure on

education increased from Rs. 1850.73 cr. to Rs. 2335.31 cr. for the corresponding period. Expenditure on HE as % of total expenditure on education increased marginally from 14.68 to 15.98. Proportion of HE expenditure to total budgetary outlay declined from 2.45 to 2.14 for the corresponding period 2002-03 to 2006-07. Proportion of HE expenditure to NSDP of Orissa at 1993-94 prices declined from 1.26 in 2002-03 to 1.22 in 2005-06.

Per capita expenditure on general education in Orissa has increased from Rs.464.30 in 2000-01 to Rs.592.45 in 2006-07.

PROBLEM AREAS :

1. **Access :** India is still lagging behind developed and several developing countries in terms of access. The access to higher and technical education is abysmally low at 12% in 2003-04. The primary responsibility of increasing access lies with the state which needs to mobilize additional resources to open new institutions, besides increasing the intake capacity of the existing institutions. Priority must be given to the backward areas in opening new institutions.
2. **Equity :** The representation of SC, ST and women in higher education is less than their proportion in the population. Higher education aims at providing avenues for social mobility for the marginalized sections. The recent demand for reservations for OBC reflects the role of HE in social mobility. High academic standards should be maintained with due consideration to special needs of marginalized groups. Students from marginalized groups should be helped through special arrangements for the required academic rigour. Students of marginalized sections must have access to more progressive and hard disciplines so that social equity in higher education assumes greater importance.
3. **Cost Recovery and Privatisation :** The recent craze is for privatizing public sector educational institutions. The higher and technical education is being increasingly privatized in multiple ways. Vedanta Company has acquired large patch of area to start Vedanta University. The public institutions had to resort to cost recovery methods to overcome financial crisis. Private

institutions are introducing a number of new courses to change the face of higher and technical education. Some of these issues delineated are below.

(a) ***Fees :*** Fees of public sector educational institutions remain inextricably low compared to private sector institutions. A student of ICSE/ CBSE Board paying @ Rs. 250/- per month when entering into +2 and +3 stage of College is used to pay only Rs. 10 to Rs. 15 even through possessing higher potentiality of payment. As a contrast private sector technical institutions are used to charge exorbitances from the students including lumpsum amount of donations in contrast to public sector institutions. Higher education has become expensive compared to the past. Besides increase in fees beyond affordable level might have regressive effect on the level and composition of enrolments.

(b) ***Self Financing Courses and Seats :*** SFCs are being introduced at the University and Autonomous Colleges with the aim of generating additional revenue. The revenue generated through distance modes are seldom used for the benefit of distant learners but utilized to finance mainstream activities of the University. It adversely affects the interest of underprivileged sections. If the trend of a SFCs continues, a time may come when the higher education system would gradually be restructured to offer only SFCs. This would not only lead to truncated growth of higher education but also weaken our society.

(c) ***Privatisation :*** The private institutions are motivated by profit. The large growth of these institutions represents commercialization of higher education. They do not even reserve seats for the marginalized groups with severe implications an equity. These institutions do not hesitate to admit students with poor academic credentials. They attempt to be financially efficient by reducing cost on vital components which adversely affect the quality. Higher Education is by far too expensive to be made privately profitable unless it is reserved for the rich or is of very poor quality. The regulation of private institutions is fraught with several legal issues. The courts are approached on all

issues ranging from the criteria to admit students, fees, reservation policy etc. The judicial response to privatization is characterized by ambivalence.

(d) ***Internalisation of higher education :*** Another challenge faced by the higher education is its internalization in the field of international trade in educational services. Several foreign institutions have already been operating in India. Many of these institutions are exhibiting keen interest in going abroad to establish off shore campuses. This situation makes things very complex and it is imperative to evolve a policy on this subject.

(e) ***Need to Raise Public Funding :*** Public allocation to higher and technical education is not only inadequate but also declining since the last decade. As the public funding of higher education could not keep pace with the growing enrolment, the real unit cost has declined drastically since 1990s. The financial stringency has led to reduce expenditure on several items of great importance and relevance to higher education. The austerity measures have taken a heavy toll on the quality of education. It is imperative that these trends in funding be reversed and public funding for higher education be raised.

(f) ***Need to evolve EMIS :*** The data base on higher and technical education system is very weak and limited to a few areas like enrolment by discipline and gender, aggregate public expenditure, faculty strength etc. Realising the importance of adequate data CABE Committee recommended undertaking a NCERT survey i.e. All India Educational Survey of higher education. There is a good case to evolve the Educational Management and Information system in Higher Education.

4. **Low proportion of HE expenditure to GDP/ ONSDP :** Considering the key parameter of HE expenditure to GDP/NSDP ratio it is revealed that Govt. thrust on HE has been dismal.

5. **Inadequate Infrastructure :** Most of the public sector educational institutions face the crucial problems of infrastructure to sustain higher education inspite of UGC building grant

provision. On the hand private sector education institutions are misutilising UGC Seminar Fund instead of channelising it to infrastructural development. Most of the institutions have chronic staff shortage, inadequate library facilities, no improvement in quality teaching, inadequate research facility, contractual appointment of teachers and so on.

RESTRUCTURING EDUCATION :

Urgent Reforms : The reconstruction may be effected at there levels. The higher education system in India is characterized by extreme rigidity and a total lack of flexibility. There should be introduction of Semester system in all educational institutions, bringing major examination reforms by adopting continuous internal evaluation and well defined academic auditing and adopting credit system.

Medium Term Reforms : The anachronistic affiliating system is a curse on our higher education system. It has converted colleges into coaching centers and teachers into mere tutors. Steps must be taken to liberate the higher education system from the deteriorating effects of this curse. Autonomy must be granted to as many deserving colleges as possible. Colleges marginally falling short of autonomy requirement must be helped to fulfil the requirements and gain autonomy. For each major university having a number of affiliated colleges, an autonomous Board of Examinations under the full charge of a pro-vice chancellor must be established. The V.C. and Board of Management must be concerned only with University departments and autonomous colleges.

Long Term Reforms : The real weakness of HE Deptt. is in the structure itself. It must be in universities and the absolute anachronistic affiliating system must vanish from Indian soil. We must set targets of about 2500 University level institutions for 2020 and fulfil it in the next 15 years. We must pass the pending Private University Act especially to prevent the haphazard development of private universities. We have currently a scheme of funding five universities identified as institutions with potentials for excellence. Deserving colleges must be granted deemed University status or autonomous colleges by 2015. A Five Year scheme must be prepared to transform them into Junior Colleges offering job oriented diploma programmes after 12 standard. The affiliating system must cease to exist after 2020.

Necessary convergence between conventional and distant modes has to be ensured besides bringing about qualitative improvement in all programmes of HE. Private Sector with philanthropic motives need to be encouraged with the sole aim of making quick not money. Foreign institutions accredited in their homeland should be allowed to offer only those programmes which they offer in their country and should be subjected to the same sanctions as applicable to domestic providers. The fee charged for various programmes should be determined within the regulatory framework prescribed for all institutions of higher learning.

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Education in the Era of Globalisation : Some Emerging Trends

Dr. Sangram Kumar Mohapatra
Senior Lecturer in Economics
Simulia College, Markona, Balasore

Backdrop :

After independence in the era of planned economic development in India, Indian education began to grow very rapidly. Today India's progress in all fronts in world's largest network is contributed by education. India has the one of the largest pools of manpower in science and technology. The institutions in India in this regard like IITs, IIMs, AIIMS, IISE, JNU, DU are the best universities and are considered as the best in the World. It is also quite instrumental that within the selected few countries of the World India's rank no doubt tops the list sometimes that it has the capability to develop Super Computer, IT advancement, fast breeder reactor's satellites and satellite launch vehicle etc. Industrialization and agricultural development have reached far beyond the expectations through the length and breath and started to share with inter national competition world over in terms of quality and efficiency.

Essence of Education In Globalization Perspectives :

With the advent of time, the challenges of life have multiplied. The process of globalization has brought people to one another. It removes the barriers to free trade. It makes closer integration of national economies. In economic scene, globalization refers to the integration of different economies of the World through trade, investment and migration of the people. It means integration of the people in the economies and societies through cross-country flow of information, ideas, technology, goods and services, capital and finance and people. Connectivity is the essence of globalization. Hence it can be concluded that more free trade means more welfare of the people. The revolution of the World in IT ET has rendered education most portable, flexible and viable, non-linear and student-centric. Globalization in education refers to integrating an international dimension in teaching, learning and service functions of the institutions.

There was a time when the World was big and slow in changing. The boundaries and the barriers amongst the nations have almost vanished. It is becoming small day by day. It is quick in wearing a new garb. The whole World has shrunk into a small village. The process of globalization has brought people to one another and as such its spectrum is becoming wide and wider day by day. The student is no longer a citizen of his own land. He is regarded as a World citizen. So he has to be taught, trained and developed from larger perspective from globalization.

Education : A Relay Race in the Present Scenario :

The top World Competition in the present scenario has become a relay race in the field of education. If someone steps into the track of the 21st Century much would be visualized. The only two alternatives crop up is either to participate or perish in the long race of cut-throat competition but there is no third way out to chalk out solutions for multifarious problems. As the supply of the useful knowledge is infinite and easily coming like a rushing wind from every corner of the World, it happens to be a global village, the demand is only for the excellent and high quality goods. The price of education is determined by the basic laws of economics in terms of demand and supply. As a result of this unique and unprecedented situation, the quality of higher education is coupled with consumer satisfaction at competitive cost.

FEATURE OF HIGHER EDUCATION IN INDIA VIS-A-VIS AMERICA :

In spite of various transformations made and impressive achievements under taken to develop educational systems, it can not be considered as an unqualified success India has the highest number of illiterates in the World. The quality of education at primary, secondary, colleges & Universities level is not up to mark. It is a matter of grave concern that the benefits of growth and development in Science and technology are not at all earmarked. They have not reached the common mass. The quality of higher education (HE) in the country is deteriorating as a consequence of quantitative expansion. Some private institutions in U.S.A. are providing excellent education without govt. support. Peaceful academic activities with better learning environment including strict rules and regulations are the features of higher education that are in America. The State-run institution can not meet its

requirements because of paucity of funds. In U.S.A. Cornell University which has been set up more than 130 years ago with a lump sum donation from Ezra Cornell, a self-made man with Govt. support becomes the institution of excellence. Also Manipal Institutions have been spread and are providing quality education.

Commercialization & Profit Maximization : The Twin Goals of Privatization :

Privatization of higher education (H.E.) leads to commercialization which brings more profit in comparison to Govt. managed institutions. In course of the Govt colleges and Govt. institutions located in cities, the benefit goes to urbanites and the students living in the urban areas. The need of the hour is to establish institutions of higher education in rural areas to uplift the rural people from illiteracy and increase the number of literates.

The motive behind privatization is not the "Attainment of Education for All". Some professional colleges of Medicine, Engineering, IT and education by management institutions have been established by politicians who collect huge money as capitation fees to provide education for them education has become almost a business. Education is not a factory. It is a man-making institution.

In India, not more than 4 per cent of its GDP is spent for the purpose of HE. From the low level only one tenth is spent on HE. Therefore extending HE activities to a large number of people on the one hand and improving its quality on the other would be a cry in the wilderness. Hence the immediate task before the Govt. should be, to generate more resources for financing education in general and transferring a great deal of resources in favour of HE in particular. So in India funds for HE can be generated mainly from three sources : a) Govt. either central or State, b) from students themselves, c) other sources from philanthropy, industry and sale of publications etc.

HE : A State of funding Activity :

However a cursory look at some data reveals that HE in India has remained in "a State of funding activities". Government funding has increased from 49.4 per cent to 75.9 per cent between 1950-51 and 1986-87 (JBG Tilak, 2004) Funds from other two sources namely fees and other miscellaneous sources have declined sharply from 36.8 to 12.6 per cent in case of the former and 13.8 to 11.5 per cent in case of

the latter during the above years under discussion. The share of fees during the same period has declined almost three times. On the contrary significant increase can be noticed in an increase of enrollment of the students.

Quality Education : the ultimate Goal of Economic Development In India :

A country's economic and technological progress depends a great deal on its military and political strength which greatly depends on "Quality Education" to be imparted by Teachers at HE level. So Govt. should come forward to bear its cost. Otherwise a significant per centage of population would be debarred from HE. The present debate over subsidization of education has become the present thinking in the cyclic process of advancement in the field of education. As GDP level in India in education scenario especially HE is low and while one fifth of our population is absolutely poor and down trodden and a great majority of Indians are not significantly better, it is very difficult to garner resources for a decent living and the possibility of HE, resources is quite remote.

In the context of present scenario the following things are questionable debated :

(i) Should the state continue to finance higher education ?

(ii) Should students and their parents meet a larger share of cost by way of enhancement of fees and fines ?

(iii) Should private sector be asked for to bear a greater share of expenditure on higher education ?

These issues should be seriously addressed in the context of prevailing conditions in India. The same method adopted in foreign countries like USA and the countries over the globe for financing HE can not be adopted as models for India in this present context.

Higher Education as Non-merit Good : The New Perception of Govt.:

Education as per constitutional provisions is considered as 'Public good' and also as 'Merit good'. Merit goods because of their overriding importance should be provide even if the members of the society do not demand them. In a free market these goods are under-consumed because of ignorance and externalities. If the provision of education is left to the market then the cost of educating the children will have to be

borne by their parents. In this sense higher education and its opportunities from which Indian students would be deprived of are questionable too. The brilliant scholars will be at home. Precious live will be lost, if it is left to the market forces. In this sense, it can be told that the State should either take up the case of supply of merit goods or itself subsidize their availability. Another important aspect and issue of providing HE in India is that the costs is rising day by day. It is a high cost era in which we have entered. High cost education presently relates to fees paid but it is reflected in govt's allotment of funds for education Here also a good number of students pursuing higher education would find it difficult to pay and continue their education. In this context Indian economy is considered as a "glass-house economy" having the notion of socio-economic ramifications. Govt. for socio-economic conditions transformation should be bountiful in bearing the rising cost of HE to ensure economic equity and social justice.

Objectives & Methodology :

In this context, the researcher wants to investigate triple objectives of some emerging trends of education in the era of globalization in general and Higher Education in particular

(i) Education being a public or a merit good, how far is successful ?

(ii) The discussion of Market failure in assuring optimal supply of merit good and public good leads to the increasing number of illiterates in the economy.

(iii) To judge that how far Indian economy has entered into a high cost era and unable to provide higher education from Govt. funding Agencies. This study is undertaken basing upon data collected from secondary information.

In early 90's the Govt. of India introduced a number of Economic Reforms which were very much comprehensive covering almost all aspects of economic life of the Indian Economy. It included strengthening of market forces, industrial and trade liberalization, Financial deregulations, privatization and foreign direct investment (FDI). The reforms had varying impact on different sectors. The Education Sector also came under its impact.

The NIPFP, UNESCO, World Bank & Xth Plan Reports on HE :

In 1997, the National Institute of Public Finance & Policy (NIPFP) prepared a paper on the provision of subsidies. This discussion paper

classified secondary and higher education as a "Non-Merit good". Only elementary education was considered as a " Merit good". Hence govt. should reduce subsidies on higher education. The approach paper towards HE came under severe attack from noted economists and educationists. Consequently the Ministry of Finance partly modified its earlier classification of goods. It put the HE into a category called "Merit-2 goods" which need not be subsidized by the State at the same level as Merit goods. The approach paper to the Xth Plan notes : "Since budget resources are limited and as such resources that are available, need to be allocated to expand primary education. It is important to recognize that the universities must make greater efforts to supplement resources from the govt. University fees are unrealistically low and many Universities have not been raised these in decades. A substantial hike in University fees is essential. (Xth Plan Approach Paper : 2001). "A Policy framework for Reforms in Education" as a part of Prime Minister's Council on Trade and Industry of the then NDA Govt. was made. This Report recommended that Govt's role should be minimum at the level of higher education.

This Report is popularly known as Ambani-Birla report. It is also recommended that all educational institutions in India – Schools, Colleges and Universities and other institutions of HE must be rated by independent agencies as is the case with financial

sector. It is also strongly recommended that the fundings should be linked to the ratings earned by the educational institutions. The change in the Govt. attitude could be attributed to the reports of UNESCO and the World Bank which imply that social rates of return are found to be consistently not higher than private rates of return to education. Hence it was recommended that public subsidies could be reduced and individuals could be asked to pay for their education and private returns of HE are more than those of primary and secondary education (World Bank : 1994-2000). It has been estimated that social return of primary education is 25 per cent while HE is only one per cent

Observations & Findings :

It is also argued that subsidization of HE would be regressive leading to income inequalities by transferring resources from poor to rich, as benefits of higher education accrue more to rich than to poor. Resource crunch is the fundamental problem that governments in

developing countries are facing. Education is the one sector where expenditure can be reduced to a certain extent in the context of resource crunch.

Privatisation is the catchword at present in HE. It is not bad per se. However its application to education would be highly injurious and iniquitous in Indian context. 'Pay as you consume' no doubt is the golden maxim of private sector which allows to occupy more importance in education. Equity and social justice demand that the beneficiaries of primary and secondary education from deprived and weaker sections should have access to HE. Those who are able to pay must pay but what about the millions who are unable to pay ? If market forces and principles are applied to the provision of education, then meritorious students from economically disadvantageous groups, women and minorities may be compelled to pull themselves out. The Western model in the area of education finances can not be taken as a model for India.

Conclusion :

To sum up, steps should be taken to harmonise education as an easy access to the worthy and deserving scholars in our society who should take a vow to serve the mankind after being educated and also for the greater interest of the society and humanity at large, pioneering efforts be made and developed to cater to the needs of the Nation in toto and to achieve manifold progress in all spheres. HE, its development depends on the development of primary education, its investment i made for investment in next generation. The State should bear the cost for it.

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Resource Mobilization In Higher Education : Problems And Prospects

Dr. R.C. Mishra
Reader in Economics
Government Women's College, Puri

Higher Education in India has made significant progress in the post independence period. The number of universities has increased from 28 in 1950-51 to 372 at present, the number of colleges from 700 to 17000 including 1800 women's college and the student enrolment from less than half a million to 10.48 million in 2004-05. Enrolment of women students rose from 2.45 million in 1997-98 to 4.04 million in 2004-05 constituting 40.4 per cent of the total enrolment. The gross enrolment has increased from 1% in 1950-51 to 9.2% in 2003-04. This has to be increased to 25% by 2020. The number of teachers are 4.5 lakhs. The student teacher ratio is 1:13. The average number of affiliated colleges per university is 49.70. The statistics shows that 89% of undergraduate students, 66% of post-graduate students, 82% of faculty member are in affiliated colleges. Although 66% of post-graduate students are reading in affiliated colleges there is no facility in these colleges. Only 9% of research scholars are in affiliated colleges. There is no post of professor in affiliated colleges and departments are managed by Junior staff members.

Most of the affiliated colleges are dearth in consideration of class rooms, library facilities, research facilities, teaching aids, faculty strength, qualified teachers with research degree. Hence these institutions only perform classroom teaching and prepare students for examination.

The number of universities in India are very few in comparison to other developed countries. In Japan there are 684 universities, -512 of them are private, in U.S.A 2364 universities -1752 in private, in U.K. 104 universities, with 231 autonomous institutions, and in Germany 330 universities.

The number of affiliated colleges under universities are also very high in India. Andhra University is having 405 affiliated colleges, Osmania University is having 390, Anna University 232 and J.S. University 161. Hence universities take enormous responsibilities in the conduct of examinations and publication of results.

The share of Higher Education in research in India is practically low. This is reflected in the allocation of funds in 1999 for Laboratories and Research Institutes. The central sector receives 62.5% of funds, state sector 8% of funds, public sector 5%, and private sector 21.6% of funds. Higher Education institutes receives only 2.9% of funds. The share of higher education should have been 10%. Because of this low level of funding the Higher Education sector which should have made a substantial contribution to the promotion of innovation and development of new technologies is not an important partner in this national effort.

The proportion of age group (18-23) entering in to Higher Education in foreign countries in 2000 is as follows – U.S.A. 80%, Canada 88%, Australia 80%, Finland 74%, U.K. 52%. In general in advanced countries more than 50% of the relevant age group are entering in to Higher Education whereas in India this ratio is only 7%. This number has to be increased to 25% by 2020.

It is worth noting that in 1990 under the umbrella of major international organizations including World Bank, UNESCO, UNICEF, UNFPA etc. there was a commitment for fulfilling the needs of which has remained unfulfilled so far (Jomtien Conference on Education for all). A major positive outcome of the Jomtien Conference was that basic education received serious attention of the national governments and International Community, but at the same time this produced an undesirable effect on other levels of education. It was widely felt that basic education goals could be reached only if the public attention is diverted rather completely away from secondary and more particularly higher education.

As a result, higher education was ignored in the policy planning exercises of the government and special measures were initiated to reduce the intensity of public effort in higher education The Govt. of India to justify its stand in this regard declared. "The higher education system in the country is now sufficiently developed to meet the nations requirement. The unmet demand for higher education is not considered economically viable" (Govt. of India 1994:75)

Such a stand results in two things

1. It ignored the interdependence of various levels of education.
2. It ignored that growth in primary education will require a rapid rise in demand for secondary and higher education.

These things are based on certain faulty assumptions.

(i) Higher Education is not important for growth and development.

But it is observed that it is only those countries that have developed their higher education systems and attained a gross enrolment ratio of at least 20%, could achieve economic miracles and not the others (Tilak, 2003a). Also the low enrolment ratios in higher education is also associated with low income of the countries.

(ii) Developing countries like India could not fulfil their goals with respect to primary education, unless secondary and higher educations are ignored.

But experience shows that primary education is necessary for social and economic development but not sufficient for economic growth and sustainable development. Societies those have concentrated only on primary education and ignored secondary and higher education could not achieve high level of economic growth.

(iii) Higher Education can be provided by private sector, the state need not necessarily provide it.

As we know, private sector is associated with profit, self interest and short term considerations. Where public sector higher education system expanded well, (Europe, North America) that could reach high level of Development. Societies e.g.,. Latin American countries, and Philippines in east Asia where higher education system is predominantly expanded by private sector could not promote much.

(iv) It may be argued that privatisation may be encouraged without commercialization.

But in principle and practice there is no difference in these two. Govt. of India appointed a committee headed by two noted industrialists– Mukesh Ambani and Kumar Mangalam Birla to suggest the needed reforms in education sector, along with other sectors. The committee

(ABC 2000) though noted the critical importance of the role of the state in development of education including higher education in several developing countries of the world, strongly suggested that Govt. of India should leave higher education altogether to the private sector in stocks and barrel and the Govt. should confine itself to school education. Further it pleaded for legislation for the private university bill and also suggested that users pay the cost which is strictly enforced in higher education supported by loans and grants to economically and socially backward sections of the society. But the committee however did not feel the need to provide any rational basis for its suggestion.

The government of India appointed two committees on central universities under Justice K. Punnayya (UGC - 1993) and another on technical education under the chairmanship of D. Swaminathan. (AICTE - 1994) to outline methods of mobilization of resources for higher education. These two committees submitted the report in 1993-94, stressed the importance of state financing for Higher Education and argued for a firm commitment on the part of the Govt. to finance higher education. These committees also suggested several measures to mobilize non-governmental

resources for higher education. But the Govt. ignored the 1st recommendation and followed the other recommendations such as: (a) rising fee level (b) raising of resources of the institutes through consultancy, and sale of other services (c) introduction of self financing courses (d) introduction and revitalization of students loan.

The Govt. accepted three above recommendations. Several committees were also constituted by central and state govts. (e.g. U.G.C. 1997,1999,2000) to work out fee reforms. Large number of universities have launched self financing courses mainly to generate additional resources. Large number of universities have also setup University Industry Cells to promotes close link between Industry and Industrial sector. Although AICTE committee has suggested for creation of Educational Development Back of India, this could not be set up. Student loan schemes were floated by the Commercial Banks and are operated on uncommercial lines.

Govt. of India's discussion paper on "Government subsidies in India" (1977) for the first time, classified higher education (and also secondary education above elementary level) as 'non-merit good' (and elementary

education as a merit good) and suggested Govt. subsidies would to be reduced drastically to these non-merit goods (Srivastav, Sen, 1977). The Ministry has partially modified the earlier classification of goods and reclassified higher education in to category called 'Merit-2 good', that need not be subsidised by the state at the same level as of merit goods. (Srivastava and Amarnath, 2001)

Because of these development the new economic policy which included stabilization and structural adjustment required a drastic cut in public expenditure including education, for which higher education suffered severally, and public expenditure on higher education began to decline.

The knowledge commission on higher education (2006) does not recognize the importance of public education and the significant role the state plays in the development of higher education to contribute to national development in most civilized part of the world. The commission seems to be strongly favouring privatization of higher education, the growth of private and foreign universities and more importantly, drastically reduced role of the state. The report advocates that the Government support for higher education should be at least 1.5 per cent, not 2 per cent of GDP from a total of 6 per cent of GDP for education. It is the Central Advisory Board of Education (CABE) Committee (2005) on financing higher and technical education, for the first time argued (not necessarily based on any detailed calculation on the financial requirements of higher education sector but recognizing the need for balanced development of the total education system) for the allocation of 1.5 per cent of national Income to higher education (1.0 per cent for higher general education and 0.5 per cent for higher technical education) out of 6 per cent of national income for education. The recommendation to allocate 6 per cent of national income to education was made long ago by the Education Commission (1966). The Knowledge Commission also recommended that student fee should meet at least 20 per cent of the total expenditure of universities. This was also a recommendation made by Justice Punnayya Committee and Central Universities (UGC 1990) and the Dr. Swaminathan Committee on Technical Education (AICTE 1994).

However the recent CABE committee 2005 has recommended that this 20 per cent should be regarded as the maximum, as increases beyond

Self Financing Courses & Resource Mobilisation in Higher Education

Dr. Sudhakar Patra
Dept. of Economics
N.C. (Auto) College, Jajpur
&
Debendra Nath Bhoi
Dept. of Economics
N.C. (Auto) College, Jajpur

1. INTRODUCTION

The economic development and human resources are closely interlinked and interdependent. The development of social and economic infrastructure is the key strategy for economic growth of a country. Education is an important component of social sector which can be broadly divided into primary education, secondary education and higher education. Since independence, Govt. of India is providing free primary and school education and subsidising higher education. The revenue collection in higher education is of a very low proportion to total expenditure in it. After introduction of economic reforms in 1991, the Govt. is trying to mobilise the resources for higher education and reducing the grants. The method and sources of resource mobilisation in higher education have been an important subject matter of academic discussion. The UGC and State Govts. are granting autonomous status to different colleges by making provision to introduce self finance courses for source mobilisation This paper is an attempt to analyse the status of higher education in India, sources of resource mobilisation and nature of self finance courses. It provides a case study of method of resource mobilisation of Narasingha Choudhury Autonomous College, Jajpur, Orissa.

2. EDUCATIONAL STATUS & POLICY IN INDIA

Out of various social components, education is the most important subject matter which has been emphasised in all five year plans and policies. The effective utilisation of manpower depends upon the level of education and training. A highly educated and trained manpower will

contribute much to the economic development. A recent World Bank study across the countries has established that increasing the average level of schooling by three years is associated with 27% increase in the rate of economic development and increasing education by 6 years lifts economic growth by 39%.

i) State of Education in 1950-51

At the time of independence, the level of education and literacy was abnormally low in India. In 1951, only 20.3% of the people were literate out of which male literates were 27.2% and female literacy rate was 8.9%. The system of education that was inherited from the Britishers was highly unproductive and strongly based in favour of general education. The aim of the Britishers was to produce a class of educated people, well versed in English language which would help them in their day to day administration. Expecting this limited objective, they did not pay any attention for the spread of education and literacy in India. There was no technical and vocational education in India at the time of independence.

ii) National Policy on education

The Govt. of India approved the new education policy in May 1986 to meet the changing socio-economic needs of the country. The new policy aims at creating a pattern of democratic, socialism and secularism. It should help in understanding the Indian culture and tradition, the social system of the people living in different parts of the country. To achieve the objective, the curriculum of all States and Union Territories should have common subjects. The new education policy is to be implemented both by the Centre and the States. The UGC, All India Council of Technical education, Indian Council of Education, Agriculture research and Indian council of medical research were proposed to be strengthened to give concrete shape to the new policy. It was also proposed that the National Council of Education would organise research and training at the central level and State Council of Educational would organise research and training at the state level. The highlights of the new Education Policy, 1986 are as follows :

(i) Uniform Pattern of Education.

(ii) Universalisation of Secondary education.

(iii) Vocationalisation of secondary education.

(iv) Specialisation of higher education.

(v) Development of technical education.

(vi) Adult education.

(vii) Involvement of the voluntary organisations in education.

(viii) Free female Education.

3. UNIVERSITY GRANTS COMMISSION & RESOURCES IN HIGHER EDUCATION

The University Grants Commission was established to promote teaching and research in emerging areas in humanities, social sciences, languages, literature, pure science, engineering and technology, pharmacy medical, agricultural science etc. The emphasis was oriented to support such areas that cut across disciplines and subjects such as health, environment, bio-technology, stress management, history of science and many other areas as would be identified by subject experts.

The Commission provides financial support for the items like equipment, books and journals, research personnel, hiring of technical services, contingency, chemicals and consumable, travel and field work, seminar, conference and furniture along with other special requirements.

4. HIGHER EDUCATION & RESOURCE MOBILISATION IN N.C. AUTONOMOUS COLLEGE, JAJPUR

The present case study is based on N.C. Autonomous College, Jajpur which is named after late Choudhury Narasingha Charana Mohapatra, a land lord of Jajpur who donated the land. This college is three kilometers away from the district headquarters of Jajpur. The students of both urban and rural areas inside and outside the district come to the college for higher education.

5. VOCATIONAL AND SELF-FINANCING COURSES FOR RESOURCES MOBILISATION

Since introduction of autonomous statues of N.C. College, different departments have started self financing courses since 1999. The important self financing courses are as follows :

(i) **Certificate course in Insurance Business (CIB):-** This course has been introduced after due approval of the state Govt. of Orissa and it has been recognised by the university grants

commission. The department of commerce is the nodal department conducting this course. The students admitted pay only Rs.500/- as the course fee and Rs.50/- as the examination fee. They are provided with months of class-room teaching along with study materials. Eminent professors in the field of commerce, insurance and management along with insurance executive officers teach the students in this CIB course. The total number of students admitted are 85 in 2005 and 79 in 2006. The resource mobilised in 2005 was Rs.42500/- & in 2006 it was Rs.39500/-.

(ii) **Certificate course in Marketing Management (CMM) :-** This course was introduced as a self-financing course in this college with Rs.600/- as the course fee. The total number of students admitted were in 2006 and total resources mobilised were Rs.49200/-. The course is completed in six months. Departments of commerce and economics are conducting this course which is open to all +2 passed students and service holders.

(iii) **Diploma in Insurance Business (DIB) :-** The students after completion of CIB course join DIB as a self finance course for a period of six months. The course fee is Rs.500/- and 44 students completed this course in 2006. The total resources generated were Rs.22000/-.

(iv) **Diploma in Marketing Management (DMM) :-** The students after completion of CMM join DMM as a six month self financing course for which the course fee is Rs.600/-.

Proposed Self Financing Courses :

(i) ***Three years pass course in rural technology :-*** The department of zoology has proposed to introduce this course for +2 qualified students. This course is waiting for Govt. approval which is yet to be achieved.

(ii) ***Diploma in Disaster Management :-*** The Dept. of Political Science has proposed to conduct one year diploma in disaster management which has been sent to Govt. of Orissa for approval.

(iii) ***Computer Science (Honours) :-*** Computer Science honours course was adopted in 2001 session in N.C. College. This course

has been approved by the Govt. of Orissa and a computer lab with 11 computers has been established in the college. This course could not be activated till now due to insufficient number of students.

This autonomous college has proposed to introduce six month certificate course in communicating English and three month course in tailoring, computer literacy and designing.

6. CONCLUSION

India has abundant labour and scarce capital for which investment in higher education has been very low. After economic reforms Govt. and UGC have proposed for resource mobilisation in higher education by the universities and colleges. The self financing courses introduced in colleges are able to generate resources in many states. In Orissa the self financing courses in Ravenshaw College, BJB College, GM College, Khalikote College are able to mobilise resources upto 25 lakhs per year. Since N.C (Autonomous) College is a rural based college, it is offering self financing courses at a low course fee to the students. The introduction of self financing courses are delayed due to late approval of courses by the Govt of Orissa. The autonomous colleges should be given more autonomy to introduce self financing courses of short term in nature. However technical assistance must be provided by the UGC and department of higher education to activate more self finance courses in the state.

Response Mobilization for Higher Education – Problems and Prospects in the Changing Scenario

Dr. Rajan Kumar Sahoo
Lecturer in Economics
M.N.S. Mahavidyalaya
Khairabad, Mugpal, Jaipur

ABSTRACT

The paper examines the expenditure increased in education and points out that the resources are not adequate to meet the growing demand of educational requirements, particularly of higher education. Since Orissa has plenty of natural resources like forests, mineral resources, marine resources and so on, course curriculum should modernized to provide technical and professional education on the basis of self-financing courses to meet the needs of the state.

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LIST OF MEMBERS

INSTITUTIONAL MEMBERS

1. Council of Analytical Tribal Studies,
   Pujariput Road, Koraput - 764 020
2. Directorate of Economics & Statistics,
   Govt. of Orissa, Heads of Deptt. Buildings,
   Bhubaneswar - 751 001.
3. Gopabandhu Academy of Administration,
   Chandrasekharpur, Bhubaneswar - 751 013

LIFE MEMBERS

A

1. Dr. Adwait Kumar Mohanty
   N3/21, IRC Village,
   Nayapalli,
   Bhubaneswar - 751015.
2. Dr. Akhay Ku. Mohanty
   At : Matiapada,
   P.O.: Puri, Dist : Puri.
3. Smt. Anajali Das
   Deptt. of Economics
   B.J.B. Morning College,
   Bhubaneswar.
4. Aparajita Biswal
   Deptt. of A & A Economics
   Utkal University,
   Vani Vihar, Bhubaneswar.
5. Dr. Ajeya Kumar Mohapatra
   Deptt. of Economics,
   G.M. College,
   Sambalpur.
6. Major A.K. Roy
   Dy. Director
   H.E. (Retd.), Orissa.
7. Dr. (Smt.) Amita Choudhury
   Deptt. of Economics,
   Berhampur University
   Bhanja Vihar, Berhampur-7,
   Dist : Ganjam.
8. Sri Anirudha Behera
   Deptt. of Economics
   F.M. Junior College,
   Balasore.
9. Sri Askhaya Kumar Panda
   457, Laxmi Bai Nagar,
   New Delhi - 110023.
10. Smt. Anuradha Mohapatra
    Deptt. of Economics,
    P.N. College,
    Khurda
11. Dr. Akrura Chand
    Deptt. of Economics,
    Sambalpur University,
    Burla,
    Dist : Sambalpur.
12. Miss Annapoorna Satapathy
    At : Ganeshpur,
    P.O.: Chandol,
    Dist : Kendrapara.
13. Dr. Abhay Kumar Nayak
    Asst. Registrar, I.I.T.,
    Kanpur,
    Uttar Pradesh,
    Pin - 208016.
14. Sri Aditya Kumar Patra
    Deptt. of Economics,
    Kalinga Mahavidyalaya
    G.Udayagiri,
    Phulbani.
15. Dr. Arabinda Mishra
    Associate Professor,
    Deptt. of Natural Resources,
    TERI School of Advanced Studies,
    Darbari Seth Block,
    IHC Complex,
    New Delhi-110003.

16. Smt. Asha Dugal
Deptt. of Economics,
Banki College, Banki
Dist : Cuttack.

17. Sri Amulyanidhi Pradhan
Deptt. of Economics,
Govt. Evening College,
Rourkela.

18. Mrs. Arati Nanda
Research Scholar, ARDCOS
115, Basundhara Apartments,
Rasulgarh, Bhubaneswar-10.

B

19. Dr. B. Eswar Rao Patnaik
SBR Govt. Women's Junior College,
Berhampur,
Dist : Ganjam.

20. Sri Bhabani Prasad Dash
Madhapur,
Gandhi Chhak,
Jagatsingpur.

21. Smt. Banabasini Mohapatra
Deptt. of Economics,
S.K.D.A.V. College,
Rourkela.

22. Dr. Binayak Rath
Prof. in the HSS Deptt.
IIT, Kanpur - 208016
Uttar Pradesh.

23. Dr. Bidyadhar Nayak
Plot. No.- 932,
Mahanadi Vihar, Cuttack.

24. Sri Basanta Kumar Das
Co-ordinator,
Fakir Mohan University,
Vyasavihar, Balasore.

25. Sri Benudhar Mishra
Qrs. No.- IV B/37/2,
Unit-3, Bhubaneswar -1

26. Sri Bimal Kumar Dash
Deptt. of Economics,
Govt. Women's College,
Dhenkanal.

27. Smt. Binodini Dalei
Deptt. of Economics,
V. Deb College,
Jeypore, Koraput.

28. Sri Bhabani K. Patnaik
Deptt. of Economics,
R.C.M. Science College,
Khallikote, Dist : Ganjam.

29. Sri Bibhudendu Mishra, I.R.S.
Director General,
Investigation, Income Tax,
Calcutta.

30. Sri Bijay Kumar Bose
SIDBI,
IPICOL House,
Bhubaneswar.

31. Dr. Bhimasen Prusty
Deptt. of Economics,
Charampa College,
Charampa, Dist : Bhadrak

32. Dr. Bimal K. Mohanty
Deptt. of Economics,
Revenshaw College,
Cuttack.

33. Dr. Basudeb Sahoo
Retd. Prof. of Economics,
A/M-39, Kapila Prassad,
Bhubaneswar-2.

34. Dr. Bhagaban Swain
Deptt. of Economics,
Revenshaw College,
Cuttack.

35. Dr. Bhagabat Patro
Deptt. of Economics,
Berhampur University,
Berhampur-7, Dist : Ganjam.

36. Sri B.K. Sahoo
Principal,
Chikiti College, Chikiti,
Dist : Ganjam.

37. Dr. B.K. Panda
Deptt. of Economics,
Berhampur University,
Bhanja Vihar, Berhampur-7,
Dist : Ganjam.

38. Sri Binayak Das
Deptt. of Economics,
KSUB College,
Bhanjanagar,
Dist : Ganjam.

39. Sri B. Samantray
Deptt. of Economics,
R.C.M. College,
Khalikote,
Dist : Ganjam.

40. Smt. Basanti Das
Deptt. of Economics,
Rayagada Women's College,
PO./Dist : Rayagada.

41. Sri B.K. Mohanty
Deptt. of Economics,
Malyagiri College,
Pallahara, Angul.

42. Dr. Bijayalaxmi Rout
Deptt. of Economics,
Ravenshaw College,
Cuttack.

43. Major Bramhanda Sahoo
Plot No.- 1215/1423
Khandagiri,
Bhubaneswar.

44. Dr. Benudhar Nayak
HSS Dept. NERIST,
Nirjuli,
Arunachal Pradesh.

45. Prof. Baidyanath Misra
17, Sahid Nagar,
Bhubaneswar.

46. Dr. Bedabati Mohanty
N-3/314, IRC Village,
Nayapalli,
Bhubaneswar - 751015.

47. Dr. Balaram Mishra
Deptt. of Economics,
F.M. College,
Balasore.

48. Sri Bhikari Behera
Deptt. of Economics,
Godavarisha Mohavidyalaya,
Banpur, Dist - Khurda.

49. Sri Basanta Kumar Mohanty
Deptt. of Economics,
Malyagiri,
Angul - 759118.

50. Sri Biswambhar Jena
Deptt. of Economics,
D.K. College, Jaleswar,
At/P.O.: Dhansimulia,
Balasore - 756084.

51. Dr. Bishnupriya Mishra
Deptt. of Economics
B.J.B. College,
Bhubaneswar.

52. Dr. Bandana Pathak
Deptt. of Economics,
J.K.B.K. Govt. College,
O.M.P. Square,
Cuttack - 3.

53. Sri Bharat Bhusan Mohanty
Deptt. of Economics,
S.A. College,
Balipatna, Khurda.

54. Dr. Bidyadhar Parida
Deptt. of Economics
Sukinda College,
Sukinda,
Dist : Jajpur.

55. Sri Binod Bihari Nayak
Deptt. of Economics,
Bamra T.F. College,
Bamra, Sambalpur.

56. Sri Bidyadhar Praharaj
Deptt. of Economics,
S.G. College,
Kanikapada,
Dist : Jajpur.

57. Dr. Bhabesh Sen
Deptt. of A & A Economics,
Utkal University,
Vani Vihar,
Bhubaneswar.

58. Sri Biswabas Patra
NCDS,
Chandrasekharpur
Bhubaneswar - 13

59. Sri Bidyadhar Mahanta
Matru Nilaya,
Keonjhar.

60. Sri Bhaskar Chandra Jena
At : Kaptipada,
P.O.: Kaptipada,
Dist : Mayurbhanj.

61. Miss Bharati Das
Deptt. of Economics,
Brahmanjharilo Mahavidyalay,
P.O.; Raipur,
Dist ; Cuttack.

62. Sri Bibekananda Mishra
Deptt. of Economics,
Bhagabati Mahavidyalay,
Konark, Puri.

63. Biswaswarup Mishra
Assistant Professor of Economics,
Xavier Institute of Management,
Bhubaneswar.

64. Sri Bijoy Kumar Dash
Deptt. of Economics,
P.P. Mahavidyalay,
Tigiria, Cuttack - 754030

C

65. Sri Chittaranjan Das
Deptt. of Economics,
Padmapur College,
Padmapur, Bargarh.

66. Sri Chitrasen Pasayat
Asst. Administrative Officer,
Temple Administration Office,
Shree Jagannath Temple, Puri.

67. Sri Chittaranjan Das
NCDS, Chandrasekharpur,
Bhubaneswar-13.

68. Sri Chintamani Satapathy
Deptt. of Economics,
Karanjia College, Karanjia,
Mayurbhanj.

69. Sri Chandrakanta Das
Deptt. of Economics,
Bhadrak College,
Bhadrak.

70. Sri Chandramani Das
Plot No.- 454,
Mahanadi Vihar,
Cuttack.

71. Dr. Chandradwaj Panda
Deptt. of Economics
Gunupur College,
Gunupur, Dist : Rayagada.

D

72. Sri Dayanidhi Pal
College Road,
Salipur, Cuttack.

73. Dr. Debendra Kumar Biswal
Deptt. of Economics,
Mangala Mahavidyalaya,
Kakatpur, Dist : Puri.

74. Sri Dayanidhi Samantaray
Narayana Mishra Lane,
Behind Grand Cinema,
Cuttack.

75. Dr. D. Chaudhury
Deptt. of Economics,
Dalmia College,
Rajgangpur.

76. Smt. Ditpti Panda
Deptt. of Economics,
S.C.S. College, Puri.

77. Sri Dipak Ranjan Das
Deptt. of Economics,
Aeronautics College,
Sunabeda, Dist : Koraput.

78. Dr. Durgasankar Sarangi
Deptt. of Economics,
F.M. College,
Balasore.

79. Dr. Dilip Ray
Assistant Director,
District Statistical Office,
Puri.

80. Sri D. Mishra
Deptt. of Economics,
Godavarisha Mahavidyalaya,
Banpur, Khurda.

81. Sri Digamber Chand
Deptt. of Economics,
Bamra T.F. College,
Bamra, Sambalpur.

82. Sri Dhananjay Patnaik
Deptt. of Economics,
Seva Mahavidylaya,
Bidanasi, Cuttack-8.

83. Sri Damodar Jena
Agragamee, ND-8,
VIP Area, Nayapalli,
Bhubaneswar-15.

84. Sri Dharmabrata Mohapatra
Deptt. of Economics,
Christ College,
Cuttack - 8.

G

85. Smt. Gopa Das
Deptt. of Economics,
Municipal College,
Rourkela-2.

86. Sri Gobind Chandra Das
Deptt. of Economics,
Dhenkanal College,
Dhenkanal.

87. Dr. Golak Bihari Nath
Deptt. of Economics,
L.N.College,
Jharsuguda.

88. Sri Gangadhar Behera
Deptt. of Economics,
Seemanta College,
Jharpokharia,
Dist : Mayurbhanj.

89. Sri Gopinath Kar
Deptt. of Economics,
Mangala Mahavidyalaya,
Kakatpur, Puri.

90. Sri Gouranga Panda
Deptt. of Economics
Nilamani Mahavidyalay,
Rupsa, Balasore.

91. Prof. Ghanshyma Das
Retd. Director, H.E., Orissa,
699, Sahid Nagar,
Bhubaneswar.

92. Dr. Gyan Chandra Kar
Siddheswar Sahi,
Tulsipur,
Cuttack - 8

93. Dr. Gayatri Panda
Deptt. of Economics,
Dr. J.N. College,
Rasalpur, Dist : Balasore.

94. Dr.Gajendra Nath Das
Deptt. of Economics,
Sambalpur University,
Jyoti Vihar, Burla,
Sambalpur.

95. Sri Gobind Chandra Padhi
Reader in Economics,
Upper Block Colony,
Hinjilicut, Ganjam.

96. Sri Golak Bihari Prusty
Deptt. of Economics,
Kamakhyanagar College,
Kamakhyanagar,
Dist : Dhenkanal.

97. Dr. (Smt.) Gitanjali Panda
4, Brahmeswar Bag,
Tankapani Road,
Bhubaneswar-18.

98. Sri Ghanashyam Jena
Deptt. of Economics,
Kharasrota Mahavidyalay,
Singpur, Dist - Jajpur.

99. Sri Gopabandhu Mohapatra
Deptt. of Economics,
Khaira College, Khaira,
Dist : Balasore.

H

100. Dr. Hemant Kumar Pradhan
Institute of Financial Management
30, Kothari Road,
Nungambakkam,
Chennai - 600034.

101. Dr. Harapriya Patnaik
Lecturer
C/O.: Sri L.N. Patnaik,
Govinda Vihar, Lochapada,
Berhampur, Ganjam.

102. Sri Harekrushna Nayak
Deptt. of Economics,
Bhadrak College,
Bhadrak.

I

103. Sri I. Gopal Rao
Deptt. of Economics,
Gunpur College, Gunupur,
Dist : Koraput.

104. Smt. Indira Udgata
Deptt. of Economics,
Govt. Women's College,
Puri.

105. Smt. Indulekha Das Bhatta Mishra
Deptt. of Economics,
Govt. College,
Rourkela.

106. Miss Ifat Nawaz
Deptt. of Economics,
S.A. College, Balipatna,
Dist : Khurda.

J

107. Smt. Jharana Roy
C/o.: Sri Dinesh Saha, Advocate,
Bangali Sahi, Cuttack.

108. Dr. Jayanta Kumar Parida
Deptt. of Economics,
Banki College, Banki,
Dist : Cuttack.

109. Smt. Jyotsna Udagta
Deptt. of Economics,
P.N. College,
Khurda.

110. Dr. J.S. Mahaprasastha
Deptt. of Economics,
Christ College,
Cuttack.

111. Dr. Jagannath Lenka
Deptt. of Economics,
North Orissa University,
P.O.: Takatpur, Baripada,
Dist : Mayurbhanj

112. Dr. Jagabandhu Samal
COATS
Pujariput Road,
Koraput.

113. Dr. Jyotirmayee Kar
Deptt. of Economics,
ICFAI University, A-123,
Mancheswar Industrial Estate,
Mancheswar, Bhubaneswar.

114. Dr. Jyoti Prakash Patnaik
Professor of Economics,
Sambalpur University,
Jyoti Vihar, Burla,
Sambalpur.

115. Dr. Jitaram Dey
Deptt. of Economics,
U.N. College, Nalagaja,
Dist : Mayurbhanj.

116. Sri Janmejay Senapati
Lecturer in Economics,
Seemanta Engineering College,
Jharpokharia, Mayurbhanj.

K

117. Sri Kartik Ch. Rath
Deptt. of Economics,
Netaji Subash Bose Memorial City College,
Rajagabicha, Cuttack.

118. Smt. Kanak Manjari Mishra
C/O.: N.K. Mishra,
N-1/256, Nayapalli,
IRC Village, Bhubaneswar-751015.

119. Dr. Kumarbar Das
Deptt. of A & A Economics,
Utkal University, Vani Vihar,
Bhubaneswar-4.

120. Sri Kamalakanta Acharya
Principal
Dr. J.N. College,
Rasalpur, Dist : Balasore.

121. Sri Kailash Chandra Mishra
Deptt. of Economics,
M.P.C. Junior College,
Baripada, Mayurbhanj.

122. Dr. Kartik Chandra Dash
Deptt. of Economics,
JKBK Govt. College,
OMP Square, Cuttack.

123. Dr. K.N. Mohapatra
Deptt. of Economics,
BJB (Morn.) College,
Bhubaneswar.

124. Sri Srinivasan, I.A.S.
Retd. Commissioner of Agriculture,
Govt. of Orissa,
Bhubaneswar.

125. Dr. K. Nana Buchi
Baikuntha Nagar,
Berhampur,
Dist : Ganjam-760001.

126. Dr. Kishore Chandra Samal
N.K.C. Centre for Development Studies,
Chandrasekharpur,
Bhubaneswar-13.

127. Sri K.C. Maharana
Deptt. of Economics,
Khalikote College,
Berhampur, Dist : Ganjam.

128. Sri Kartik Prasad Jena
Deptt. of Economics,
Bhadrak College, Bhadrak.

129. Smt. Kanaka Manjari Mohanty
Deptt. of Economics,
S.B. Women's College,
Cuttack-1.

130. Sri K.C. Nayak
Suryasikha,
At/P.O.: Shymsunderpur
Via : Raj Nilgiri,
Dist : Balasore.

131. Sri Kali Charan Nayak
Additional Director,
Directorate of Higher Education,
Heads of Department Buildings,
Bhubaneswar.

132. Dr. Khetra Mohan Mohapatra
Asst. Professor of Economics,
HSS Department, HBTI,
Nawabganj,
Kanpur - 208002.

133. Dr. Kartik Kumar Das
Deptt. of Economics,
Nimapara College, Nimapara,
Dist : Puri.

134. Miss Krushnapriya Behera
Deptt. of Economics,
Emarti Devi Women's College,
Naya Sarak, Cuttack-2.

135. Sri Kishore Chandra Pattnaik
Deptt. of Economics,
Berhampur City College,
P.O.: Berhampur,
Dist : Ganjam.

136. Sri Kishorehari Badatya
Deptt. of Economics,
Govt. College,
Phulbani.

137. Dr. Kasturi Sahoo
Deptt. of Economics,
P.N. College,
Khurda.

138. Sk Kalimullah
Deptt. of Economics,
Sudarsan Mahavidyalaya,
42 Mouza, Dist : Cuttack.

139. Sri Kamal Kumar Tripathy
Deputy Director,
Ministry of Food Processing Industries,
Panchasheela Bhawan,
August Krantimarg,
New Delhi - 110049.

140. Sri Kalyan Sankar Ray
Asian School of Business Management
Bhubaneswar.

L

141. Dr. L.N. Dash
Deptt. of Economics,
North Orissa University, Takhatpur,
Baripada, Dist : Mayurbhanj.

142. Sri L.N.Panigrahi
Deptt. of Economics,
Aska Science College,
Aska, Dist : Ganjam.

143. Ms. Lipika Das
Deptt. of Economics,
Balikuda College, Balikuda,
Dist : Jagatsinghpur.

144. Sri Lalit Mohan Sahoo
Shri Jaydev College,
Naharkanta, Bhubaneswar,
Dist : Khurda.

145. Ms. Lila Subudhi
Deptt. of Economics,
Niranjan Govt. Women's College,
Aska, Ganjam.

146. Ms. Lipika Das
Deptt. of Economics,
K.B.D.A.V. College,
Nirakarpur, Dist : Khurda.

147. Sri Lalit Kumar Dash
Remuli College,
Remuli, Dist : Keonjhar.

148. Sri Lalit Kumar Mahanta
Deptt. of Economics,
P.S. College,
Jhumpura, Keonjhar.

149. Mrs. Lipsa Mishra
Deptt. of Economics,
R.D. Women's College,
Bhubaneswar-7

M

150. Dr. Manoranjan Das
Deptt. of Economics,
G.M. College, Sambalpur.

151. Sri Manoj Kumar Hui
Deptt. of Economics,
D.S. College, Bahalada,
Mayurbhanj.

152. Sri Manmohan Das
At : Gopalbag,
(Near Satyasai Vihar),
Baripada.

153. Dr. Mamata Swain
C-202, Nirupama Apartments,
Near Kalinga Stadium,
P.O.- Nayapalli, Bhubaneswar.

154. Smt. Minati Mishra
Deptt. of Economics
Govt. College, Bhawanipatna,
Dist : Kalahandi.

155. Smt. Manorama Mohapatra
The Samaj,
Gopabandhu Bhavan,
Buxi Bazar, Cuttack-1.

156. Sri Mihir Kumar Mohapatra
Goa Institute of Management,
Ribandar, Goa,
Pin - 403006.

157. Sri Muktikanta Satapathy
Deptt. of Economics,
Khaira College, Khaira,
Balasore.

158. Minati Mallick
Deptt. of Economics,
North Orissa University,
Takhatpur, Baripada,
Mayurbhanj.

159. Dr. Manmath Ku. Mohanty
S-3 Madhuban, Sishu Vihar,
Infocity Road, P.O.: KIIT,
Bhubaneswar - 751024.

160. Dr. Mohit Kumar Sarangi
Near Convent School,
Prafulla Nagar,
Baripada.

161. Sri Manmohan Biswal
Kanpur Anchalik Mahavidyalay,
At/P.O.: Kanpur,
Dist : Cuttack.

162. Dr. (Smt.) Mitali Chinara
Deptt. of Economics,
R.D. Women's College,
Bhubaneswar.

163. Shri Muralidhar Sahoo
Deptt. of Economics,
F.M. College,
Balasore.

164. Dr. Manoj Kumar Panda, Professor
Indira Gandhi Institute of Development Research,
Gen. Vaidya Marg,
Goregaon (E),
Mumbai, Pin - 400065.

165. Sri Mrutyunjay Adhikari
Deptt. of Economics,
S.R. College, Baliapal,
P.O.: Baliapal,
Dist : Balasore.

166. Sri Mahiranjan Dash
Retired Principal
H1/48, BDA Colony,
Kapilaprasad,
Bhubaneswar.

167. Sri Manoj Kumar Dora
Deptt. of Economics
North Orissa University,
Takhatpur, Baripada,
Mayurbhanj.

168. Smt. M.K. Devi
Deptt. of Economics,
P.N. College,
Khurda.

169. Dr. Manaranjan Behera
NCDS, Chandrasekharpur,
Bhubaneswar-751 013.

170. Smt. Manaswini Sahoo
Deptt. of Economics
Govt. Women's College,
Dhenkanai.

N

171. Dr. Nagen Chandra Mohanty
Lower Police Colony
Tulsipur, Cuttack-8.

172. Sri Natabar Rout
Deptt. of Economics,
S.V.M. College,
Jagatsinghpur.

173. Mrs. Nilendree Panda
Deptt. of Economics,
G.M.College, Sambalpur.

174. Sri Nirajan Rana
Deptt. of Economics,
Rajdhani College,
Bhubaneswar.

175. Smt. N.Pravat Kusum
Deptt. of Economics,
R.C.M.College,
Khallikote,
Dist : Ganjam.

176. Dr. N.C. Sahoo
Deptt. of Economics,
Berhampur University,
Bhanja Vihar,
Berhampur-7.

177. Sri Nalinikanta Mohapatra
Deptt. of Economics,
S.V.M. College,
Jagatsinghpur.

178. Sri Narasingh Charan Acharya
Choudwar College,
Choudwar,
Dist : Cuttack.

179. Prof. Nilakanth Rath
Retd. Prof. of Economics,
Gokhale Institute of Politics and Economics, Pune.

180. Sri N.C. Ray
Deptt. of Economics,
KBDAV College,
Nirakarpur, Dist : Khurda.

181. Sri Narottam Nanda
Near Parade Padia,
Baripada,
Dist : Mayurbhanj.

182. Dr. N.B. Pradhan
C/O.: Vima Rao,
Rangeilunda,
Berhampur, Ganjam.

P

183. Dr. P.C. Mohapatra
Director C.O.A.T.S.
Pujariput Road,
P.O./Dist : Koraput.

184. Sri Pratap Keshari Nayak
Deptt. of Economics,
Dhenkanal College,
Dhenkanal.

185. Dr. Prahallad Panda
Prof. of Economics,
Berhampur University,
Bhanja Vihar, Berhampur-7.

186. Dr. Padmaja Mishra
Deptt. of Economics,
Utkal University,
Vani Vihar, Bhubaneswar-4

187. Smt. Pratima Sarangi
Deptt. of Economics,
Sailabala Women's College,
Cuttack.

188. Smt. P.K. Singh
Deptt. of Economics,
V. Dev College, Jeypore,
Dist : Koraput.

189. Prof. Pravat Kumar Patnaik
Jawaharlal Nehru University,
New Delhi-110067.

190. Sri Pradosh Kumar Jena
Deptt. of Economics,
N.C. Junior College,
P.O./Dist : Jajpur.

191. Sri P.K. Mohapatra
Deptt. of Economics,
Khemundi College,
Digapahandi,
Dist : Ganjam.

192. Sri Prasanna Kumar Das
Lecturer in Economics,
Krupajal Engineering College,
Purba Sasan, Kausalyagang,
Bhubaneswar.

193. Sri Prabhat Kumar Mohapatra
Deputty Director,
Gopabandhu Academy of Administration,
XIM Square, Bhubaneswar.

194. Sri Purna Chandra Minij
Deptt. of Economics,
Rajdhani College, CRP Squre,
Bhubaneswar.

195. Sri Purna Chandra Patra
Deptt. of Economics,
Khallikote Junior College,
Berhampur, Ganjam.

196. Sri Prasanta Chandra Panda
Lecturer in Economics
IBAT School of Management,
KIITS Deemed University,
Bhubaneswar - 751024.

197. Dr. P.C. Dhal
Deptt. of Economics,
Kharasrota Mahavidyalaya,
Singpur, Dist : Jajpur.

198. Sri Prafulla Kumar Mansingh
Deptt. of Economics,
S.C.S. College, Puri.

199. Dr. Pragati Mohanty
L/82 Phase-I,
Basanti Colony,
Rourkela,
Dist : Sundargarh.

200. Miss Pragyan Pal
Deptt. of Economics,
Ravenshaw Junior College,
Cuttack.

201. Sri Pravakar Sahoo
Deptt. of Economics,
Balikuda College,
Balikuda,
Dist : Jagatsinghpur.

202. Sri Pratap Chandra Mohanty
Deptt. of Economics,
Bramhanajharilo Mahavidyalaya,
Bramhanajharilo,
P.O.: Rajpur,
Dist : Cuttack.

203. Dr. Purusottam Sahu
Deptt. of Economics,
Gopalpur College,
Gopalpur on Sea,
Dist : Ganjam.

204. Dr. Parsuram Samal
Senior Scientist,
Division of Social Sciences,
CRRI, Cuttack - 753006.

205. Sri Prasanna Kumar Das
Deptt. of Economics,
Karanjia College, Karanjia,
Dist : Mayurbhanj.

206. Smt. Priyambada Bhainsha
Deptt. of Economics,
V.S.S. College,
Jujumara, Sambalpur.

207. Smt. Pratima Mohapatra
Deptt. of Economics,
Nimapara College,
Nimapara, Dist : Puri.

208. Sri P.K. Bisoi
Deptt. of Economics,
T.T.Mahavidyalaya,
Ghatagaon, Dist : Keonjhar.

209. Smt. Prajna Samantaray
Deptt. of Economics,
Christ College,
Cuttack-8.

210. Sri Patitapabana Sahoo
Deptt. of Economics,
Panchayat College,
Bargarh.

211. Ms. Puspa Das
Deptt. of Economics,
Kamala Nehru Mahavidyalaya,
Unit-IV, Bhubaneswar.

212. Sri Prabodh Kumar Samal
Deptt. of Economics,
G.C. College, Ramachnadrapur,
Dist : Jajpur.

213. Sri Prasant kumar Chhotray
Deptt. of Economics,
Ekamra College,
Bhubaneswar.

214. Mrs. Prativa Kumari Dei
Deptt. of Economics,
S.K.C.G. College,
Paralakhemundi,
Dist : Gajapati.

215. Dr. Prasanna Kumar Mohapatra
Anchalika Mahavidyalaya,
Swampatna,
Dist : Keonjhar.

216. Dr. Pitambar Dash
Swarnamayee Nagar,
Berhampur,
Dist : Ganjam.

R

217. Sri Rabindra Kumar Mishra
335A, Acharya Vihar,
P.O.: R.R.L.,
Bhubaneswar.

218. Sri Rajkishore Mishra
Vice-Principal,
BJB College,
Bhubaneswar.

219. Sri Rabi Narayan Kar
Asst. Director (El & S),
House No.-605, Block-E,
MS Apartments and Hostel,
Kasturba Gandhi Marg,
New Delhi-110001.

220. Dr. R.P. Choudhuri
Professor of Commerce,
G.M.College, Sambalpur.

221. Sri Rasbihari Samal
Principal,
Women's College, Angul.

222. Dr. R.N. Mohapatra
D-292, Koel Nagar,
Rourkela-14.

223. Sri Rabi Narayan Patnaik
M-66, Baramunda,
Housing Board Colony,
Bhubaneswar-751003.

224. Sri Ramesh Chandra Sarangi
Deptt. of Economics,
N.C. College, Jajpur.

225. Sri Ramakanta Sahoo
Principal,
Biraja Women's College,
P.O./Dist : Jajpur.

226. Smt. Rabeya Parveen
Deptt. of Economics,
S.C.S. Junior College,
Puri.

227. Smt. Ranjita Kumari Mohanty
Deptt. of Economics,
Govt. Women's College,
Keonjhar.

228. Dr. Rabindra Kumar Nayak
Deptt. of Economics,
Rama Devi Women's Junior College,
Bhubaneswar.

229. Dr. R.K. Panda
Deptt. of Economics,
Utkal University, Vani Vihar,
Bhubaneswar.

230. Sri R.P. Behera
Deptt. of Economics,
Rajendra College, Bolangir,
Dist : Bolangir.

231. Dr. Ramchandra Mishra
Deptt. of Economics,
Govt. Women's College,
P.O./Dist.: Puri.

232. Dr. Ramesh Chandra Mishra
Deptt. of Economics,
KKS Women's College,
Balasore.

233. Dr. Rajan Kumar Sahoo
Deptt. of Economics,
U.N.S. Mahavidyalaya,
Mugapal, Kuakhia,
Dist : Jajpur.

234. Sri Rabindra Nath Ray
Deptt. of Economics,
Indira Gandhi Mahila Mahavidyalaya,
Near Sati Choura,
Dist : Cuttack.

235. Dr. Radha Mohan Mallick
783 E, Jayadev Tower Complex,
Jayadev Vihar,
P.O.: R.R.L.,
Bhubaneswar-751013.

236. Prof. R. Padhy Sharma
Director,
Institute of Economic Studies,
Manasi Mansion,
Jayprakash Nagar,
Berhampur-10, Ganjam.

237. Dr. R.K. Sahoo
Principal,
Nimapara College,
Nimapara, Dist : Puri.

238. Sri Ramesh Chandra Panda
Deptt. of Economics,
Swarnachud College,
Mitrapur,
Dist : Balasore.

239. Sri Ratnakar Mohapatra
Deptt. of Economics,
Khaira College, Khaira,
Dist.: Balasore.

240. Sri Rabindra Kumar Mishra
Deptt. of Economics,
Nilamadhab College,
Kantilo, Dist : Nayagarh.

241. Sri Raghunath Dalei
Deptt. of Economics,
Khallikote College,
Berhampur, Ganjam.

242. Sri Ramakanta Prusty
B.P.College of Business Administration,
Gh-6, Sector-23,
Gandhinagar,
Ahmedabad.

243. Sri Ranjit Kumar Das
Faculty Member,
National Bank Staff College,
Sector-H, L.D.A. Colony,
Kanpur Road,
Lucknow, Pin-226012 (U.P.).

244. Dr. Rasananda Panda
D-1, Lake View Apartments,
Vastrapur,
Ahmedabad-380015.

S

245. Smt. Sashikala Patnaik,
N-2/121, Nayapalli,
Bhubaneswar.

246. Sri Saroj Kumar Panda
Deptt. of Economics,
Rajdhani College,
Bhubaneswar.

247. Dr. Saroj K. Rajguru
Deptt. of Economics,
Govt. Science College,
Chhatrapur,
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Deptt. of Economics,
Khalikote College,
Berhampur,
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Deptt. of Economics,
D.D. College,
Keonjhar.

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Deptt. of Economics,
Khaira College, Khaira,
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Deptt. of Economics,
Paramanand College, Bolgada,
Dist.: Khurda - 752066

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Scientist, C.R.R.I.,
Bidyadharpur, Cuttack.

254. Mrs. Shova Das
C/o. Sri A.N.Das
135, Bapuji Nagar
Bhubaneswar - 9.

255. Sri S.Mishra
Deptt. of Economics,
K.B.D.A.V. College,
Nirakarpur, Khurda.

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Deptt. of Economics,
KKS Women's College,
Balasore.

257. Dr. Srijit Mishra
IGIDR, Gen. Vaidya Marg,
Goregaon (E),
Mumbai-400065.

258. Sri Subrat Kumar Rana
Deptt. of Economics,
K.K.S. Junior College,
Balasore.

259. Dr. Shanti Das
Backside of Sangam Talkies,
Mahatab Road,
Cuttack.

260. Sri Sarat Kumar Nayak
Deptt. of Economics,
Ravenshaw College,
Cuttack.

261. Smt. Sita Sahoo
Bhadambadi,
Cuttack.

262. Dr. Saila Devi
Director, CMDR,
DB Rodda Road,
Jubilee Circle,
Dharwad, Karnataka.

263. Sri S.C.Mohapatra
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S.K.C.G. College,
Paralakhemundi.

264. Sri Srinath Sahoo
Vill : Kendal,
P.O.: Madhusudanpur Sasan,
Dist : Jagatsinghpur-754103.

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Cuttack-2.

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B.J.B. Morning College,
Bhubaneswar.

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S.I.S.I., Vikash Sadan,
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P.O.: Chandrasekharpur,
Bhubaneswar-751013.

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Cuttack.

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Deptt. of Economics,
R.D. Women's College,
Bhubaneswar-7

287. Dr. S.C. Koomar
781, Madhusudan Nagar,
Unit-IV, Bhubaneswar-751004.

288. Smt. Sujata Mohanty
Deptt. of Economics,
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Dist : Cuttack.

296. Prof. Surendra Nath Mishra
Shyamakali Lane, 3rd Line,
In Front of Loka Seva
Pharmacy Factory, Puri.

297. Ms. Sunanda Patnaik
Deptt. of Economics,
Niranjan Govt. Women's College,
Aska, Ganjam.

298. Dr. Subhranshubala Mohanty
C/o.: Dr. P.K. Mohanty,
Qrs.No. (F-5),
Utkal University Campus,
Vani Vihar,
Bhubaneswar-751004.

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Deptt. of Economics,
Godavarish Mahavidyalaya,
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Vastrapur, Near GNFC info Towers
Sarkhej G' Nagar High way,
Bodak Dev,
Ahmedabad-380054.

303. Sri Santanu Kumar Nayak
Deptt. of Economics,
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N.K. Choudhury Centre for
Development Studies,
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Sunabeda, Dist : Koraput.

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Professor of Economics,
Indian Satistical Institute,
Sansalwal Marg,
Qutab Enclave, New Delhi.

T

315. Dr. Trilochan Mohanty
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F.M. Coilege, Balasore.

316. Sri Trilochan Kanungo
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134, South Avenue,
New Delhi.

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322. Smt. Usharani Pujari,
Kedargouri Apartments,
C2/005, Lewis Road,
Bhubaneswar-2.

323. Dr. Upendra Pathy,
Deptt. of Economics,
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A-31, Mancheswar Industrial Estate
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   Dist.: Balasore.
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   Department of Economics,
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   Department of Economics,
   Srinibash College,
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   Konark College, Konark,
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   P.O.: College Square,
   Dist.: Cuttack.
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   Dharmasala, Dist.: Jajpur.
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   Department of Economics,
   B.S. College,
   At/P.O.: Nayahat,
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   Department of Economics,
   N.C. College,
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    At/P.O./Dist.: Jajpur.
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    Department of Economics,
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    Department of Economics,
    Biraja Women's College,
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    Jagatsinghpur.
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