Gender, Rural Planning and Management: A Review

Tapati Dasgupta and R. N. Chattopadhyay

INTRODUCTION

Gender Issue has taken a global dimension in the 20th and 21st centuries and it has been turned into a crucial and critical issue of the world today. From time immemorial it has been observed that though the gender folk give the main support to the insular family, this fair folk have been the victims of subjugation and negligence for ages. But comparing with the Euro-American countries, the gender folk in the Afro-Asian countries witnessed a more fatal fate in all spheres of life. Of late, many scholastic works on gender problems, particularly on gender rural problems have been done with utmost effort and acumen. In the great forerunner study on gender aspects, 'The Second Sex', it has been observed, that technology was almost inherently male from the beginning, that it was men who invented tools and weapons and sailed forth to conquer the world, that both hunting and early agriculture were male- dominated and these technologically oriented activities were more essentially human than female- linked nurturing activities (de Beauvoir, 1988). The author believes that this does not necessarily bring about two distinct camps in the world. The women should not possess any passive or immanent attitude towards technology development and should not also deny their participatory roles in the development process. Beauvoir calls for women to escape from 'otherness', to become transcendent themselves, in other words to appropriate technology. But anthropological researches unravel the fact that it was a very difficult task for women to make a break-through from the shackles of social bondage and come to limelight. Various remedial measures have been also suggested by different scholars for gender empowerment from various angles, but no concrete path for alleviation of gender agony has yet been dictated. This paper intends to classify and review some of the works done on gender issue and give a critical analysis on the said problem.

The opinions of some of the eminent scholars regarding gender issue have been compiled in a paper named 'Appropriate Technology for the upliftment of rural women: A case–study from Nayagram Block of South-West Midnapore, West Bengal' (Chattopadhyay et al., 2002) presented at the National Conference on Emerging Technologies and Women (ETWOM – 02) at Indore. The passage runs like this - "Many critiques have been developed regarding feminist attitude and aptitude towards technology, but the established theory of the past centuries was that gender physique and gender mental make-up did not match with the emerging technologies of the modern age. Eminent scholars like Donna Haraway (Haraway, 1985), Maria Mies (Mies, 1993) Bina Agarwal (Agarwal, 1992), Vandana Shiva (Shiva, 1989) and others have supported this theory and they are of opinion that feminist epistemology is totally devoid of scientific or technological polish and they believe that in most of the sectors , like agriculture, industry, small-scale industry etc gender physique is unsuitable and unrequired. So, the bulk of technology-backed up task is always being carried out by the male members of the society and it is also a fact that the male dominated society did not give any scope to the fair sex to uplift their socio-economic status through proper implementation of technologically practices." This paper, not only uncovers the traditional, romantic myth of gender aspect, but it displays an empirical study carried out in the Nayagram Block of West Midnapore, West Bengal, through which it is proved that women can achieve miracles with technology installment in a rightful manner. That the Non Timber Forest Produces (NTFPs), which are profusely found in the forests of Nayagram can be scientifically processed and cultured and turned into products of ethnic beauty for livelihood generation of the poverty-stricken forest fringe tribals has been made possible by the gender folk in this part of the country. The NTFPs, which have opened this wonderous chapter in Nayagram history are Sabai grass *(Eulaliopsis binata)*, Sisal *(Agave)*, Atari *(Combretum decandram)*, Bamboo *(Bambusa tulda)*, Sal leaf *(Sorea robusta)*, Mushroom, Honey etc. Only two such NTFP technologies have been described in this paper with the help of which the gender folk have been able to carve out a distinct destiny of economic sufficiency of their own. They have

been able to form different Craft Units and Self Help Groups (SHGs) of their own with the assistance of IIT Project Team. The females are now definitely in a position to handle bank affairs with same kind of assistance. This definitely denotes their entrepreneurial and management skill in a rural scenario. This paper demonstrates a particular style and promise for future fate of gender folk for its original manifestation.

Another paper presented in the same session of the above-mentioned Conference, entitled 'Appropriate Technology for upliftment of Rural Women' (Kulkarni and Kulkarni, 2002) is worth-mentioning. This paper, written from a different dimension reveals the clear disparity between urban and rural women in Pune. Two sets of surveys were done for the urban and rural women and the urban women were interrogated about the possible programmes for the upliftment of rural women. A statistical report has been given in this paper, which shows the very low status of women in every aspect of life in the three villages of the District of Pune, namely, Kharpudi, Shinavali and Mandoshi. It is interesting to note that the urban women have suggested some remedial measures for the upliftment of rural women in the said villages. Some of the remedial measures are as follows- i) Eradication of illiteracy; ii) Arrangements for vocational trainings like Day Care Centre, Silk-Worm Farming (sericulture); iii) Tailoring; iv) Handloom (weaving); v) First Aid Training / Mid- day Training; vi) Banking Schemes by and for women; vii) Grihini Udyog for developing household goods etc. For achieving all these goals, the urban women suggested that funds should be raised from private agencies, from governmental level and from voluntary donations of the urban women themselves. In order to minimize the labour of rural women certain provisions should be given to them, such as, cooking gas instead of cow-dung, solar energy for lighting, water storage from rain, ultra- modern cow-shed, low- cost housing scheme, mobile medical help etc. The aim of this paper is quite ambitious no doubt, but the whole scheme is yet in the cradle. The urban women's liberal gesture and propositions are definitely praise- worthy and unique, but unless and until the ideas materialize into facts, there remains a conflict between utopia and reality.

The paper entitled 'Harnessing the potentials of the rural Boro women' (Narzary, 2002) presented in the Conference, unleashes the possibilities of the rural Boro women in the Tibeto-Burman region. Narzary very aptly points out– "Various types of potentials of rural women are hidden with each and every group of community. Some of them are well harnessed, whereas some are not harnessed or remains untapped, hence sometimes it dies out and they remain backward. In many rural tribal societies, due to Sanskritization and Westernization, people feel it inferior to practice their culture and traditions, including occupation, though no culture is inferior or superior." According to Narzary, the rural Boro women, who comprise the largest tribal community in North East India have tremendous potentials in weaving, piggery, poultry, silk-worm culture etc. There is a need to harness these potentials through government and non-governmental intervention. Basic strategies for the development of rural Boro women should be mechanization and training on designing of clothes, managerial training on piggery, poultry and silk- worm culture. Introduction of technical education along with formal education and motivation to take up such activities as occupation should be the prime motto of the Government, so that the rural Boro women can shine in their traditional practices and can give sufficient economic support to their families. The message of this paper is excellent, but without proper implementation and monitoring of the programmes, one cannot point to the positive side of the fact.

Another set of papers are being compiled in a bulky volume called 'National Consultation on S & T for Women: A Millennium Dialogue'. Here a brilliant article named 'Women, Technology and Rural India: From Empowerment to Sustainable Development' (Agarwal, 1999), describes the pitiable condition of Indian rural women in spite of the massive work load that they are undertaking from the bygone years till today. Agarwal is of opinion that rural Indian women are more conscious about the environmental where-abouts as well as about environmental degradation. He remarks, "Since rural women have a special understanding of natural resource management and more sensitively to environment, rooted deep in their roles and work tasks, they can play a crucial role in re-nurturing and re-greening of rural India." Need to use S& T to erase women's work – load inside and outside the house involving them as equal partners are the need of the day. The question is how to empower women? The author has prescribed a two- fold mission for fulfilling

this task, namely suitable technology choice and technology modulation and transfer with systems approach. The author in this context has made the meaning of technology crystal clear to the readers. "Technology must ensure sufficient production of food, fodder, fuel, energy, clean drinking water and fertilizers without spoiling and damaging the environment. Thus drudgery should be reduced both in household related tasks and occupational tasks. This would energise rural women to direct themselves towards active and useful participation in other economic activities and in the overall technological transformation of the society." Figure 1 shows the picture of Technology Development and Transfer at Grass-root Level.

The paper concludes with the conviction that the technology model described in this paper will illustrate how scientific and technical intervention can improve the quality of life of women in rural areas. It is worth- mentioning that the paper has a concrete scientific approach towards technology intervention for the betterment of rural women in India.

A very intricate scientific thrust has been given in the paper named 'Science and Technology for Women: A Millennium Dialogue' (Sharma and Henriques, 1999). The authors have

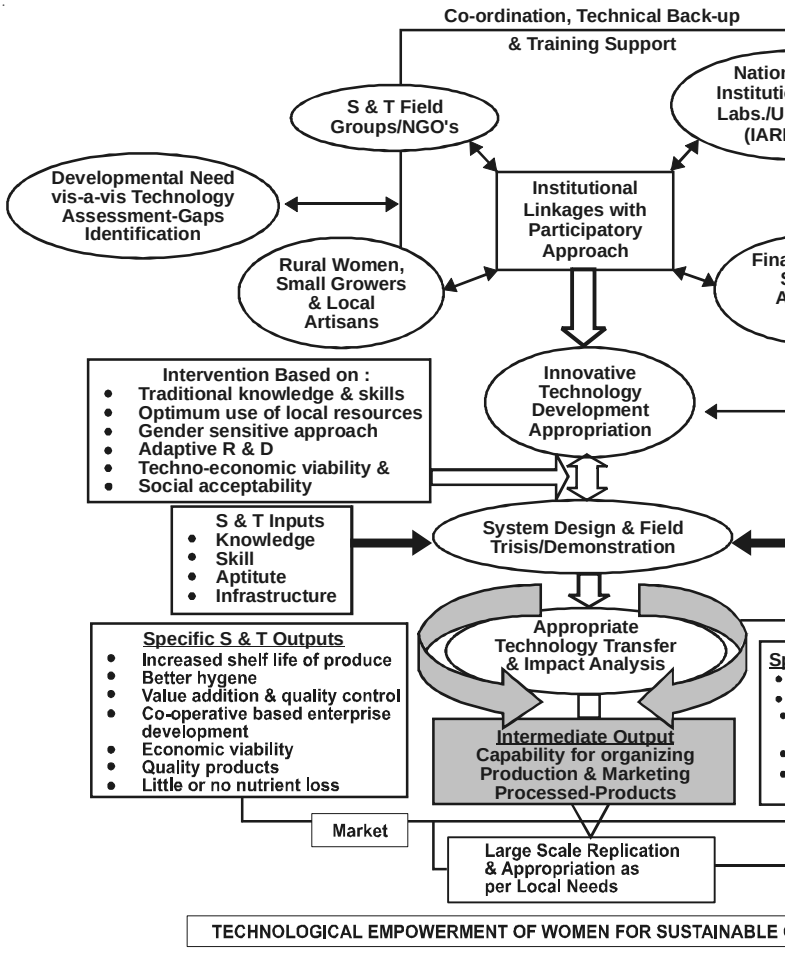

Fig. 1. Systems approach: Participatory technology development & transfer at grassroots level

given emphasis on bio-technology as the effective medium for empowering rural women in India. Identification and definition of problems have been cited and the authors' comment in regard to conversion of waste into by-products is valuable– "Bio- technology offers extensive scope for converting waste products into by-products. The past decades witnessed a substantial growth in the farming, poultry, fish rearing and horticulture industries. The conversion of the wastes generated by these industries has not been tapped for its utility as a low- cost organic fertilizer by-product. Despite a shortage of steer manure, economical methods for converting poultry, dairy or fish farm wastes into fertilizers for crop farms have not yet been developed. Advocates of vermin-culture fail to take into account costs incurred in transportation and in labour required for collecting and churning the bulky organic matter. There is also peculiar socio- cultural problem of caste bias in handling excretory waste. This makes vermin- culture compost expensive and useful only to cultivators of high-value produce." This is a very good lesson that we get from this paper. Not only that, the authors have suggested to explore different avenues for trying various bio-technological experiments in wood craft, vegetable colouring, dyes, aromatic oils, medicines etc. Entrepreneurship developments for rural women can be made possible through these economically viable products made out of bio-degradable wastes. Finally, as far as marketing of these products are concerned, Sharma and Henriques share the opinion– "If bio-technology is to be popularized at the rural level, it is necessary to formulate marketing strategies that will assist acceptability. The conservative nature of the agrarian society and caste-biases in handling of certain effluent or organisms has to be considered in formulating strategies. It is possible to create a 'cascade effect' by initiating innovations in chosen areas and allowing percolating to adjoining sites." These innovative ventures are made possible, according to them in large number of disciplines, like, agriculture, diagnostics, food- preservation, bio-pesticides, bio-fertilizers, etc. But it is the availability of infrastructure that encourages entrepreneurial activity and enables the conversion of techniques into technologies .The paper no doubt is a robust attempt towards solution of many problems of women in rural India and towards the making of prospects for gender management in bio- technological arena. The prospects, if properly explored and experimented, can create marvelous results in near future.

The conception of 'Women Technology Park' is a novel one, through which women can develop their self-reliance, managerial capacity and even rural planning method. Several 'Women Technology Parks' have been facilitated by the Department of Science and Technology New Delhi, in different quarters of India. Vinita Sharma has written an excellent demonstrative article called 'Women Technology Park' in this edition (Sharma, 1999), which envisages to explain the exact model of a Women Technology Park, through which the rural women can really look forward for a better destiny. The author has explained quite distinctly that why Women Technology Parks are exclusively meant for women. Some of the points are really note-worthy. Firstly, it has been pointed out that technological change, specially that which is designed to improve the quality of life in the rural areas, has been directed towards the tasks that men perform, both in and outside the household. Development programmes, according to Sharma, have not taken gender dimension into account. Secondly, women are repositories of different components of indigenous knowledge, which may require documentation, upgradation or adaptation, if it is to be used in present day context. Thirdly, it has been very aptly put by Sharma that technology adoption by women is much faster if their needs and knowledge are incorporated right at the research phase and dissemination stage. This, in fact is a very valuable opinion which stands in contrast with the traditional opinion that women have inhibitive attitude towards technology oriented pattern of work. Fourthly, the author believes that Technology Park exclusively for women will provide the right impetus to researchers, scientists and technologists to design tools and implements keeping in view the ergonomic characteristics of women. The WTP is envisaged as a resource centre in which from a single window, all necessary support is made available to women for –

- Improving the quality of life
- Increasing incomes and creating employments based on local resources
- Capacity building
- Diversifying the landscape of rural economy
- Help in sustaining their physical environment

The functions of the Exhibition / Demonstration Unit will be varied; some of them are

mentionable –

- Technology in agriculture–organic farming, integrated pest management, nursery establishment, low-cost tissue culture, hydroponics, medicinal and aromatic plants, dye plants.
- Technologies in post- harvest technologies to include low-cost processing and preservation of local surplus of horticultural produce into value- added items for household use and for income generation, household pest management.
- Exhibition of natural resources of the area to include bio-diversity mapping of the area.

The success of the whole story will of course depend on the capability as well as the sincerity of the implementing agencies. Even the non-governmental agencies, it is believed, are the best delivery agents. In conclusion, it is narrated that for successful empowerment of women, "it is important that a comprehensive approach is taken in designing any programme for women. The holistic approach should focus on all aspects of women's development including health, nutrition, awareness building, training and capacity building for a long- term sustainable women's development. In these efforts, apart from technology input, mobilization of women into co-operatives and groups to provide them with the required social support to handle new patterns of attitude and behaviour is critical in their empowerment process. WTP is a typical example in this direction, which others can emulate." So, in a nutshell, it can be said that the ideas which are assembled in this particular essay can reap real benefits for the gender generation and can help the gender folk to come out of their age-long slumber and veiled feminist inertia to hold the gear of the family and society at large in a firm hand. The article is enriched with scientific as well as practical messages which may help to achieve fruitful results in near future.

A very thoughtful message has been given by N. C. Saxena, in his book 'The Saga of Participatory Management in India' about gender position in Forest Management (Saxena, 1997). Forests, all over the world are mainly dominated by the forest-proximal people and women, it is believed have a special role in forest-related policies, since they are the protectors and collectors of forest produces. This very right of women has been eternally ignored and even the Joint Forest Management Regulations of 1988 could not make adequate space for women in JFM administration. In the opinion of Saxena, "The problem is of providing an adequate share to women in management responsibilities in JFM committees. Women's rights and entitlements have been almost totally overlooked. For instance, Bihar, Karnataka, Madhya Pradesh and Tripura provide for membership of only one representative per household. Gujarat, Rajastan and Maharashtra have left the matter open. Punjab has no provision for a general body at all; and in Jammu and Kashmir, it is unclear that whether a man and a woman can represent a household. "Many empirical surveys have been conducted in this context to motivate the rural and forest- fringe women folk and the men-folk have been also sensitized to assist the gender group to come into limelight, but all efforts have proved to be quite fruitless. Saxena, has penned down certain characteristic points for uplifting gender status. "Given the sex-segregated and hierarchical nature of Indian society, separate women's organizations and staff are needed to work among women, to instill confidence, so that they can fight for their rights. Therefore, whenever there is recruitment, more women need to be recruited in the Forest Department. The village-level committees should have adequate representation of women forestry staff, who should be sensitized to gender issues through orientation programmes. As women in many societies still feel inhibited to express themselves in mixed gatherings, each committee should have a separate women's cell for raising their awareness and improving their skills. The quality of women's participation and the control they exercise over decision- making process is more important than the sheer number of women present in such bodies." Saxena also gives emphasis on gender sensitization through micro-planning so that probable gains from planned interventions for increased availability of forestry products, availability of new products for subsistence and market- oriented income- generation, introduction of new income-earning activities not previously available, generation of wage-labour activities etc can be accrued. This section of Saxena's book is full of promises for the gender folk in India, who are the deprived and the exploited lot of the society. But the ideas are too high- sounding and visionary and even scholars like Saxena fails to give any permanent solution to this glaring problem of the day.

Gender issue has taken a global dimension,

particularly in the Third World countries – the African states try to handle the pattern of gender issue in their own experimental framework. An article published in an Indian Journal, entitled, 'Participation of Women local leaders in Women-based Rural Development Projects in Osun State, Nigeria' (Okunade et al., 2005) reveals the method of leadership taken up by women at the grass-root level. In Nigeria the women, who constitute 49.6% of the total population (according to 1991 Census) are capable of producing 60 %- 80% of food products of the country as the FAO Report of1996 tells us. The Nigerian women are also capable of giving leadership at community level for giving shape to women- based rural-development projects. An investigation was conducted into the participation of women local leaders in the women- based rural development projects in Osun state, Nigeria. The study was conducted in all the six administrative zones of the state. Six rural Local Development Areas (LGAS), one from each zone, where women-based rural development projects were concentrated and 18 women groups (three from each LGAS) were purposively selected for the sampling. Structured interview schedule was administered to 108 women local leaders sampled from the women groups. Descriptive statistical technique like frequency and percentage distribution, means and standard deviation were used to analyse the data. Correlation coefficient was used to determine the relationship between the variables investigated in the study. Results showed that women local leaders participated in 12 women-based rural development projects out of which nine are production projects, while three are processing projects. The women leaders were also involved in all the activities / operation at all stages of programme development, such as problem identification, decision-making, plan of action, implementation and evaluation. There was positive and significant relationship between participation of women local leaders and levels of education ($r = 0.210$). Other variables with negative but significant relationship are external orientation ($r = - 0.353$) and occupation ($r = - 0.297$). The kind of activities in which women are involved are group farming, animal rearing, soap making, pottery making, tie and dye making, mat and bag weaving, cloth weaving, vegetable production, crop production, oil palm processing, cassava processing, soyabeans processing etc. These programmes, if undertaken and performed with profuse zeal and exuberance, can achieve miraculous results. It is to be remembered that just like India, Africa had once been the victim of colonial lust and the extent of oppression and cruelty inflicted upon her soil and soul had been more gruesome than that of India. It was a difficult task for the 'Black Africans' to assert themselves from the gloom of poverty, unemployment, slavery, malnutrition and from over- all humiliation. So, it is a pleasure to see the African women are coming out of their dark den of pathos and playing a prominent role in the process of rural management affairs and giving leadership roles in some of the areas of developing states like, Nigeria. This paper brings in a note of vibrant promise on the part of women in a Third World country.

CONCLUDING REMARKS

After analyzing the content and message of the above-mentioned eight papers written in the background of 'Gender, Rural Planning and Management', we may draw certain conclusions. All the papers, with the exception of a few, have been written with a notion that is versed in language, but not in reality. The papers all signify a tune of dynamism and optimism, but the major lacuna detected out of these papers is the clash between utopia and reality. The gender issue has undoubtedly taken a crucial turn in the previous and present century, but the problematic pockets of gender aspects have not undergone a big change, especially in the rural world as yet. In spite of race for progressive trends towards literacy, employment and empowerment, women still remain desperate and desolate as far as their security are concerned. And in spite of activities towards rural development programmes, women's ancient positions as primitive labourers at home and outside and as sex-workers will remain unchanged.

Moreover, it may be said that the impact of science communication varies according to the attitude, outlook and decision-making power of the grass- root people, who are again divided among themselves in taste, culture, adaptability, habits and aptitude due to division of rural society into different social layers. An accurate analysis has been done in a paper named ' Differential Trickle-Down effects of Science and Technology over Social Layers of Participant Communities' (Chattopadhyay and Dasgupta, 2005) which

uncovers "that differential trickle-down processes need different techniques of transfer for effective outcome. Standard kits of transfer process should be changed to different baskets for technology package for different social layers. A long process of analysis has proved that even if the same kind of technology packages are offered to all layers of people, the level of acceptance differs. The spirit and readiness with which a Mahato and mixed community village can accept technology package, a Santhal or a Lodha village is not in a position to accept the same. The same type of package with much variation and simplicity has to be offered to the latter groups. Moreover, in case of the former category village, training and demonstration will suffice the purpose, but in cases of Santhal and Lodha villages, the same pattern of work has to be repeated and continuously monitored. Continuous financial back-up is also required for an effective trickle-down process in these social layers." For the sake of convenience, the social layers have been divided into three categories, namely, 'Creamy Layer', 'Intermediate Layer', and the 'Residual Layer'. The authors propose to define 'Creamy Layer' as the group belonging to the Mahato and other mixed type of villagers whose level of acceptance is higher owing to their higher level of intelligence and better socio-economic back-up. Naturally the willingness to accept technology packages in them is greater and the urge for better living is also higher. The concentration in the 'Intermediate Layer' is observed to be moderately responsive or less responsive again owing to their ethnic background and social relations with other communities of people. The Mahalis, Bhumijas and sometimes even the Santhals comprise this category. On the contrary, the 'Residual Layer' communities are mostly immune to response and it is very difficult to motivate this class of people with packages of technologies, because they lack in their aptitude to grace or raise their economic standard. The Lodhas and Santhals mostly belong to this category. This social layer psychology is not only true in the West Bengal scenario, but if examined, this will prove to be a blatant factor which is lying dormant in each and every rural society. This is a very important feature of rural management policy, particularly when gender issues are concerned, but this special phenomenon has been ignored mostly in the above reviewed papers. Unless and until, the social groups are properly identified, and their acceptance level is measured, neither gender outlook can be defined, nor village-based rural technologies can be implemented. The scientific as well as the humane approach should be the essence of the entire study.

Another loophole that is diagnosed in almost all the papers is that no specification of works has been streamlined between men and women in rural areas. One important factor is that many scholars cherish the idea that modern technologies have their roots in Western lands and they are mainly male- oriented. The answers are neatly reflected in these lines – "The fact that most technological innovations in recent centuries have been dominated by Western men does not mean that technologies are 'Western and male' and alien to the culture of Asian and African women and men. Still there is a point at which sensitivity to the interests and needs of the majority toiling poor women of the world calls for some choices among technologies. No technology is inherently 'female' or 'male' and women need entry into the use and development of all the socially beneficial technologies, but nevertheless some distinctions can be made. To take an example from bio- technology, while entry for women into the 'hi-tech' end of the new development remains something to be fought for, we would prefer to focus on lower cost bio-technologies and for example, on the development of the new varieties that are pest-resistant and not pesticide- resistant." (Omvedt and Kelkar, 1995). This point has been also explained by de Beauvoir in his book 'The Second Sex', as mentioned in the introductory portion of this paper. The modified 'feminist standpoint' demands for both hi-tech and low-cost technologies that would really crown women with managerial skill and rural policy making power. Regional Institutes of Technology, such as Asian Institute of Technology (AIT) and the Agenda 21 of the 'Earth Summit' at Rio have both emphasized the need for increasing the educational and training opportunities for women in science and technology .Thus we can conclude with suggestions for policy research and training:

- Low-cost decentralized and integrated energy technologies should be developed.
- LEISA technologies in agriculture, forestry, animal husbandry, fishing and agro-processing should be given priority with an increasing role of women.
- There should be further integration of women

into the high-skilled areas of technological research and development as part of their movement to equal participation in the decision- making process of technology.

- A 'walking on two legs' approach which gives full priority to people-oriented decentralized low- cost technologies while fighting for the entry of women into every sphere of technology development and decision-making is central to a gender perspective on technology.
- Today's 'Information Society' measures for women's success to information at all levels should be undertaken as a crucial aspect of empowerment.
- Indigenous knowledge in agriculture, medicine, crafts in which women have a major role should be given full value as a resource for people oriented technological development (Dasgupta and Chattopadhyay, 2003).

Technology is neither 'Western' nor 'modern' –it has vastly benefited from sophisticated scientific development, but it has its roots in indigenous (non-Western and pre Industrial Revolution) systems. Women have played an important yet unrecognized role in these systems and in the history of technology development. The 'technology question' for women is not simply a question of success or gaining a new entry but of restoring and carrying forward a creative and empowered participation of women in technology development, political and economic empowerment, but enhanced knowledge skills and education are crucial preconditions of this notion. The key to success in gender empowerment in a rural backdrop depends on manifold factors, namely, a) geographical environment b) demographical statuesque c) traditional skill and knowledge of some resource-based activities d) spirit of acceptance e) level of intelligence and capability f) facilities facilitated by the family and the society at large.

The papers reviewed in this article can be appreciated for three main reasons, i) Richness in philosophy; ii) Concern for the gender folk; iii) Scientific approach for solving the gender problems. The dearth that is unearthed from the bunch of papers can be categorized like this - i) The remedies evolved are not always experimented in fair deal; ii) The socio-economic problems of a rural society have not been much prioritized; iii) Women's psychological tune has not been taken into account. Gender issue of course is a wide-dimensioned problem today; theoretical texture fitted in a framework of scientific model is not probably the sufficient solution of the rigorous issue. Gender issues are to be handled in tender yet tight hands, keeping in mind their age-long struggle for decent survival against multiple social odds and also mirroring the right image of women in society in the rightful manner.

REFERENCES

Agarwal, B.: Women and Technological change in Agriculture: the Asian and African Experience. p.11 In: *Technological Changes and Rural Women: Conceptual and Empirical Issues*, Ahmed (Ed.). George Allen and Unwin, London (1985).

Agarwal, S.: Women, Technology and Rural India: From Empowerment to Sustainable Development. pp.1-15 In: *National Consultation on S & T Women – A Millennium Dialogue.* V. Sharma, S. Chatterjee and D. Raghunathan (Eds.). Science & Society Division, DST, Re- Mix Graphics, New Delhi (1999).

Beauvoir, deSimone.: *The Second Sex*, Translated by H. M. Parshley, PanBooks, London (1988).

Chattopadhyay, R. N., Dasgupta, T. and Roy, A.K.: Appropriate Technology for upliftment of Rural Women: A Case-Study from Nayagram Block of South-West Midnapore, West Bengal, *Paper presented in National Conference on Emerging Technologies & Women (ETWOM – 02) at Indore*, October 25 to 26, 2002 (2002).

Chattopadhyay, R. N and Dasgupta, T.: Differential Trickle-Down Effects of Science & Technology over Social Layers of Participant Communities, *Paper presented at XXIX Social Science Congress*, Lucknow, December, 26 to 31, 2005 (2005).

Dasgupta, T. and Chattopadhyay, R. N.: Technology and Work Pattern of Women in the Midnapore Region of West Bengal, *Science, Technology & Society*, **8(1):** 113-125 (2003).

Haraway, D.: *Primitive Visions: Gender, Race and Nature in the World of Modern Science*, Routledge, London (1989).

Kulkarni, A.V. and Kulkarni, N.R.: Appropriate Technology for the Upliftmrnt of Rural Women, *Paper presented in National Conference on Emerging Technologies and Women (ETWOM- 02) at Indore*, October 25 to 26, 2002 (2002).

Mies, M. and Shiva, V.: *Eco-feminism*. Kali for Women Press, New Delhi (1993).

Narzary, P.K.: Harnessing the Potentials of the Rural Boro Women. *Paper presented in National Conference on Emerging Technologies and Women (ETWOM–02) at Indore*, October 25 to 26, 2002 (2002).

Okunade, E. O, Farinde, A. J. and Laogun, E.A.: Participation of Women local Leaders in Women-based Rural Development Projects in Osun State, Nigeria. *Journal of Social Sciences*, **10(1):** 37-41 (2005).

Omvedt, G. and Govind Kelkar.: *Gender and Technology: Emerging Visions from Asia*. Asian Institute of Technology, Bangkok (1995).

Saxena, N. C.: *The Saga of Participatory Forest Management in India*, Jakarta, CIFOR (1997).

Sharma, C. and Henriques Bosco.: Science & Technology

for Women: A Millennium Dialogue. pp. 277-284 In: *National Consultation on S& T for Women – A Millennium Dialogue*, V. Sharma, S. Chatterjee and D. Raghunathan (Eds.), Science and Society Division, DST, Re – Mix Graphics, New Delhi (2000).

Sharma, V.: Women Technology Park. pp. 285-290 In: *National Consultation on S & T for Women–A Millennium Dialogue*, V. Sharma, S. Chatterjee and D. Raghunandan (Eds.), Science & Society Division, DST, Re – Mix Graphics, New Delhi (2000).

Shiva, V.: *Ecology and the Politics of Survival*. Kali for Women Press, New Delhi (1989).

KEYWORDS Gender. Rural Planning. Management. Science. Technology.

ABSTRACT Gender problem is a vibrant issue of the world today. The very sensitive factor that women can act as co-partners of men and even act as singular actors in all fields of science and technology is a gorgeous truth. The gender anguish of the yester- years has come to a halt. Women, particularly, the rural women are now in a position to appropriate modern technologies in order to raise the socio-economic status of their families and for larger benefits of the society. The Afro-Asian women, who had been the victims of long-drawn exploitation and humiliation, are now striding forward for a better destiny. A bunch of eight papers written from different dimensions, covering the particular aspect of gender participation in technology- based rural development activities have been reviewed with an analytical note in this article.

Authors' Address: **Tapati Dasgupta and R. N. Chattopadhyay,** Rural Planning & Management Unit, Department of Architecture & Regional Planning**,** IIT Kharagpur, Kharagpur 721 302, West Bengal, India

Telephone: 091-03222 - 220460 / 283208 (O) / 277625 (R); *Fax:* 091-03222-255303 / 282700,
E-mail: tdg_iitkgp@yahoo.com & rnc_iitkgp@yahoo.com