Social Implications of Reproductive Technology With Special Focus on Indian Women

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CERTIFICATE

Certified that the dissertation entitled "SOCIAL IMPLICATIONS OF REPRODUCTIVE TECHNOLOGY WITH SPECIAL FOCUS ON INDIAN WOMEN" submitted by RENUKA PATNAIK is in partial fulfilment for the degree of MASTER OF PHILOSOPHY of this University. The dissertation has not been submitted for any other degree of this University or any other University, and is her own work.

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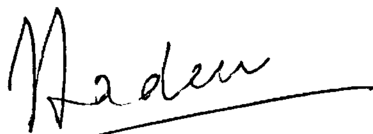

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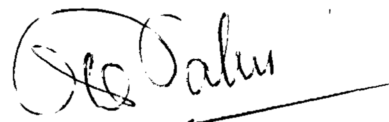

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.........to all my teachers, my parents and Ravi

in partial repayment of unrepayable debts ....

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INTRODUCTION

This study attempts to highlight the fact that the impact of reproductive technologies is not confined to the health of women: it in fact has much larger social implications.

Reviewing the literature, one found that while a lot has been said about the unsuitability of the reproductive technologies for the Indian women, the social implications still need to be adequately explored. Moreover, it was also necessary to probe deeply into the linkages between the health and the social status of women.

Though this is not an extensive study of reproductive technologies in relation to women, but still it can be said with some confidence that an effort has been made to develop a perspective whereby some light can be thrown as to why such extensive use of clinical trials of reproductive technologies are made on women alone and what are the consequences women have to face with regard to health and work.

This is a secondary study based on various studies done in this field.

In our analysis, there are two basic conceptual biases that we have adopted for our exploration. First, that technology is not objective and that it is based on scientific knowledge which is a product of a social process. This means that technology per se carries within itself the social biases of its times. Secondly, that the health of women in a society is the product of her health status within that society. In other words, the same social forces which determine women's status are also critical in influencing her health.

On the basis of these two basic assumptions, we believe that access to technology as well as the nature of technologies which are specific for women are not independent of societal forces. It is with this perspective that we have attempted to critically analyse the existing reviews and primary studies in the area of reproductive technologies and women's health.

Given this perspective it was necessary first to understand very broadly the role and status of women in our society. In this respect, an attempt has been made to co-relate and analyse the reasons for such gender discrimination.

This leads to the analysis of women's work in society, their contribution to social reproduction of labour power and the various social institutions including the family which impose certain social control on women.

The main focus of this study is to bring out the social roots of reproductive technologies and their social implications not only in terms of their negative impacts on the health of women but also the constraining role they play in the process of social liberation of women.

An analysis is made of the health impact studies with reference to some of the more popular contraceptive technologies. This is essentially to highlight the fact that the use of technology has its own objectives which are not necessarily condusive to the improvement of health status of the Indian women. While most of the studies do not bring out differences betwen

women of different classes (because their samples do not take the class factor into account), they are quite useful in exploring the negative implications of reproductive technologies for women in general.

An understanding of women's general status in society, the social biases of technology in general and reproductive technologies in particular along with their negative impacts on health status provides a broad background for understanding the social implications of reproductive technologies.

The central theme of our dissertation is to analyse the various social consequences women have to bear with, as a result of various social, economic and political forces contributing to the perpetuation of the social control on them.

Another aspect that the dissertation attempts to highlight is the way the vested interests use women's health problems and the so-called health inducing technologies for strengthening their own positions as well as their status quo.

Very briefly the objective of the study can be defined as:

1. to understand the social situation of women in society and their relationship with technology in general.

2. to review the nature of reproductive technology and the impact of some of these on the health of women.

3. to explore implications of reproductive technologies for the society in general and for women in particular.

Since this study is based on secondary literature it is limited by the methodologies used by these workers. Secondly, given the time constraints and individual limitations , the review is also not consistently extensive.

Despite the above limitations a sincere affort has been made in this dissertation to co-relate and co-ordinate the various issues cropping up from time to time from the studies done in this field.

CHAPTER - I

SOCIETY AND TECHNOLOGY

(i) INTRODUCTION
(ii) TECHNOLOGY AND SOCIAL STRUCTURE
(iii) MEDICAL TECHNOLOGY AND HEALTH
(iv) MEDICAL TECHNOLOGY AND HEALTH SERVICES
(v) TECHNOLOGY AND GENDER DISCRIMINATION
(vi) CONCLUSION
(vii) REFERENCES

INTRODUCTION:

The history of science and technology offers a body of literature that is rich, diverse, scattered, uneven and amorphous. This vast body of knowledge disseminates primary and secondary bibliographic information about the broad range of central questions and explicit emerging themes pertaining to the social aspects of technological innovations in the West as well as the Third World nations.

Social history of technology offers a balance of technical and social analysis of the evolution of particular tools machines and techniques and the knowledge needed to use them in the right way. This reflects the idea that social decisionsregarding the use of technology has to be made within the social, political, economic and cultural context.

"Technology has concisely been defined as the application of theoretical knowledge in developing methods and processes which make the life of human kind easier" [1]

If we examine the concept of technology further, we realise that technology is not just a computer, neither is it a drilling rig nor an agricultural machine.

It can be simply be termed as "using the right device to do something better for the people in the appropriate social context".[2] An assumption underlying the above concept is that the pattern of technology is shaped by the existing social demands.

Therefore we realise here that while science and technology by themselves are governed by universal principles, the mode of application of science and Technology encompasses several factors like the nature and the needs of its socio-economic mileau along with the social forces that constitute society.

In other words, "technology comprises of organisation of human resources which can be generated by the growth of knowledge regarding social development consisting of basically three elements: preservation, innovation and dissemination processes in the society."[3]

TECHNOLOGY AND SOCIAL STRUCTURE:

The innovations in technology date back to the prehistoric times of hunting and gathering stages of mankind. Probing deep into the evolution of the social dimensions of technology, we find that with changes in civilization, the economic activity of man underwent

tremendous change, and agriculture began to develop as the main occupation of the people and the basic means for survival. In order to grow more food land people began to settle down around fertile soils. Since agriculture basically is seasonal it is characterised by short periods of intense activity. Large number of people were required to work together in order to produced sufficient quantity of food . This required co-operation between several people. Also some sort of bond was necessary to ensure that people were available whenever required. Thus extended families came into being through strongties of blood and marriage. Tasks became divided among to various members who could be relied upon to contribute their labour.

Each family thus contributed labour and received a share of what the family produced. Each person's share of the family produce depended upon the volue placed on their labour. That is reason why women received less of what was consumed by the family because their contribution to labour was considered of no value. We shall discuss this in greater detail in our next chapter.

Gradually with time sharp difference arose in the amount of ownership of land as more and more people began to concentrate around fertile soils and depended upon

agriculture of their survival. Land began to the concentrated in the hands of people who had already settled earlier, while the other who were landless began to work in the farms of the landowners.

This gave rise to different types of social relationsh--ips where landowhers took the advantage of their hired labour and paid them less. "The surplus of the produce was also extracted through extra economic coercion. The land owners thus began to accumulate wealth and with the surplus thus gained increased their capacity to buy more land. This raised their income and hoarding of surplus produced. The wealth of the land owner thus accumulated through exploitation further raised his purchasing power which enabled him tobuy and utilise the newly invented machines and tools like tractors, seeds, fertilisers, pesticides and irrigation facilities. This enabled them to reap huge profits and acquire more land and increase production through exploitation"[4]

On the other hand the people who shared the crops (Share Croppers) or who worked on rented land (tenants) became either evicted from the land or had to do away with larger share of their income because they were unable to bear the cost of the land.

Yet peasants were the worst affected as they had to do away with their small bits of land since they were unable to re-pay the loan taken to buy fertilizers etc. This made them landless.

Thus we see that the introduction of technologies especially during the Green Revolution in agriculture, affected people from different economic groups and created further chain of exploitation. "The rich got richer as they could purchase more technologies with the wealth accumulated in the past. The poor became poorer because not only they were exploited long before the technologies were introduced, but also because they became more and more dependent on the landlords for their livelihood."[5]

Thus even when a new opportunity (like technology) which can potentially improve the standard of living of the people is introduced, in a given social structure, every one does not have an equal chance to benefit from them. Infact the existing disparities not only become greater because of exploitation but also harms the majority of the population at the bottom most strata of the society.

"In any society where the filtering process of the social system which selects the demands of the elite (through scientific and technological institutions) ignores the needs of the poor. In such situations technologies are developed, which respond to the social demands of a particular class (the ruling class) who have economic, social and the political power as well as the control over all resources of the land. They direct the growth of technologies in the society to suit their own needs."[6]

"Thus when the fruits of development are denied to the poor teeming millions as in, India, issues like 'equality in distribution' deserves greater attention. Along with distribution comes production, hence the question of appropriate technology."[7]

"So technological progress is not bad in itself, it only depends on what system it takes place under and how the technology is employed."[8]

For instance, in capitalist societies the desire to earn more profits gives rise to fierce competitions. This in turn, gives rise to newer innovations among capitalists and the vicious circle thus continues

with a competitive base, of which gives rise to the burgeoning growth of technology that have no relevance to the common needs of mankind. "This greed for wealth which creates ever-growing abundance of such mechanically, i.e. artificially produced goods (by machines) with the pretext of providing a life of sophistication leads man to alienation, inhumanity, addiction and destruction."[9]

For example, the development of computers as a technology in the west 'for gaining rapid information' has brought in "increasing destruction of the human essence in people....i.e. the capacity for thinking coherently".[10] Added to this is the growing incapacity for simple, spontaneous human communication. Also these technologies in micro-electronics have invaded and threatened the private life of people, even if they are an easy access to the common man. For example through the tapping of telephones there is danger of leakage of secret information; computer technology is even manipulated and misused to gain information regarding war industries and other vital installation of many countries. There are yet mechanisms by 'remote controls' used to kill people. In the bargain, the freedom of common man is shrinking. This misuse of

"high tech" in micro-electronics initially developed so enthusiastically with the aim of making life 'easier' for living have had adverse effects on man's life.

"Common to all these developments is the fact that the scientists directly" involved themselves with business, link-up with risk-capital and put new products on the market which are finally distributed on a massive scale by multinationals with the aid of government pressure. Here ethical considerations are ruthlessly brushed aside".[11]

In socialist countries too, as in Russia, "even if the means of production were nationalised but the fruits of development remained concentrated in the hands of a few. This created disparity among the rulers and the masses."[12] Hence even though the aim was to achieve 'welfare of the common man' through equal distribution of goods produced in the society, this could not be achieved through socialism too, because merely be acquiring certain new technologies as mainly in medicine and war industries in the USSR, other spheres of development like agriculture was not much taken care of.

It follows from the above that "indiscriminate transplanting of science, and technology" from advanced countries mainly results in retarding and blunting of indegenous innovation and creativity. It is by establishing a base for technological competence within the country rather than by importing technology, that we can fulfil the requirements of true development of science and technology in the society."[13]

CHOICE OF TECHNOLOGIES:

In order to be able to decide whether the technology is of any use to us or not it is essential to develop the knowledge regarding the 'social need', defined as the "satisfaction of the real requirements, which could not already be met without this technology"[14]

In order that science and technology can be used for social development in a country, "in ways that are appropriate to the masses, it is necessary to have a set of policies that owes more to the traditions

of practical relevance. Science and technology can flourish in the proper socio-economic background under optimum motivational factor with suitable ideological environment.

In India today to evolve a policy which could steer science and technology in a direction that would bring the greatest benefit to the largest number of people in the shortest possible time, taking into account the realities of the complex social processes would need a sincere concerted effort of scientists, technologists and social scientists."[15]

"In order to carve out a relevant strategy for social change, therefore, an understanding of the socio-economic problems of the people and sensitivity is required to be developed towards the values like 'efficiency', 'no wastage of resources' and 'discipline' which has to be created in a suitable environment. These help to create the 'social orientation' of technology to meet the felt needs of the people. Deliberate misplaced understanding of these basic issues leads to evolving distorted policies. For example, large amounts of money are poured in campaining for soft drinks (basically elites' demand) whereas, there are the vast majority of people who are deprived of drinking water."[16]

"Thus it appears that in a stratified society where resources are limited, those at the bottom are entangled in the network of exploitative interactions in all spheres and have least access to all resources. They are deprived of not only wealth but also of health as they are more exposed to disease and degradation in their unhealthy environment.

In the concept of environment, therefore, the social realities created by man acquires a very significant place as they not only influence the objective conditions, i.e. ecological patterns, but also subjective conditions, i.e. perception and evolution of knowledge of the environment and its influence on human health. This 'knowledge' in turn promotes and moulds specific kinds of social and technological interventions to alter or maintain a given ecological pattern or the total environment."[17]

MEDICAL TECHNOLOGIES AND HEALTH:

Some of the critical elements of the environment mentioned above that influence human health and cause sickness have been identified as: (a) social class,

(b) nutritional status, (c) water-supply, (d) housing and (e) living and working conditions. Social class determines both accessibility and availability of health service as well as the living and working environment of a group."[18] Thus the other environmental factors become linked with this social variable. For example, the so called natural disasters like droughts and famines are to a large extent a reflection of society's reluctance to protect the exploited by changing its own directions of development. Thus droughts are allowed to occur by perpetuating a certain kind of technology and during these periods of distress the process of transfer of assets from the poor to the rich in fact gets enhanced as does their misery and ill-health.

"Rosen[19] and McKeown[20] in their analysis of the growth of medical technology and health services in Britain show that the interests of professional guilds of physicians, industrialists and the ruling elite were more crucial in determining the directions of growth and evolution of knowledge. That is why even today when the germ theory has been integrated in the multi-causal concept of actiology the proponents of this approach still remain in a minority. Promotion of

'reconstructive medical technologies' which maintain the status quo within the individual and the societies, they live in, continues to be the main thrust of those in power".

"Thus in a stratified and heirarchical society where resources are limited, those that are at the bottom of the heirarchy have the least access to all resources. This general social phenomenon will be and is true for the health services system too."[21]

MEDICAL TECHNOLOGIES AND HEALTH SERVICE SYSTEMS:

"Despite the fact that the pattern of diseases has not changed much over the past 40 years and diseases rooted in poverty still dominate the scene, the expenditure on public health has been low as compared to that on curative institutions, personnel and research."[22]

"Even within specific areas of curative and preventive fields, the emphasis has been distorted. Sophisticated hospitals and specializations in less common fields have been the focus of expenditure rather than the

mere common one like TB, Malaria and diarrhoea. Similarly, in the preventive field the thrust has been on population control rather than disease control. This reveals the distortion of priorities set up in the health services. With all their concern for the poor they consider reduction of numbers more essential than improving their conditions for living.

This leads to the promotion of medical technologies which are required to diagnose and treat diseases prevalent in certain class. In the quest for of "international standards" and "quality care" India opted for sophisticated, expensive equipments whose prices could be afforded only by certain urban-based medical institutes, while the smaller and peripheral institutions in both cities and villages were left without even the most elementary equipment, laboratory facilities and emergency services."[23]

"The health services technological interventions ignored the crucial role of socio-economic factors as well as the inter-economic factors as well as the inter-relatedness of technologies."[24] "Thus failures were created in the fields of malaria and family planning besides other problems related to use of insecticides

for malaria, filaria and crop protection in different doses in the same area leading to problems of resistence of insects, ineffective doses and insecticide poisoning. The total dependence on technology in areas such as malaria control and FP has already led to failures of these programs. Consequently the use of inappropriate technology also led to an adverse impact on manpower development and organisational forms within the health services system."[25]

"The curative priority and dependence on highly centralised technology has made the health services organisation top heavey with most of the human and material resources concentrated in the urban areas only. The PHCs which are the nerve centres of health activity remain starved. Moreover the organisational heirarchies are dependent upon the social heirarchies: apart from the class background of health personnel then caste is also reflected giving essence to the elite culture of the health care institutions. These characteristics of the health services is because of the logical consequence of the planning process and the setting of priorities. These in effect give second place to 80% of the population - the major chunk of the population who are living below the poverty

line or at subsistence levels. The interests of the classes in power (which plan for health of all,) do not necessarily lie in providing health for all in a stratified society."[26] On the contrary, suit their own needs they encourage the unnecessary growth of medical technology by expansion of private practice in medicine.

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"The health services in the socialist countries like USSR, China, Cuba, Angola, Nicaragua, Vietnam and some East European countries after throwing away the yoke of feudalism and imperialism and in the process tried to build up a social system where the distribution of surplus is less inequitable which gave the health service system a distinct character. The services here are a part of a package of food, housing, clothing, clean drinking water, education and employment for all the therefore more effective than the sophisticated services of the developed capitalist world which are restricted not only in coverage but also remain isolated. The concept of prevention thereforedoes not remain confined to a few technical innovations but also encompasses socio-economic actions.

Hence, these experiences from history lead us towards a concerete understanding that different objective conditions in different parts of the world have created not only different types of health service systems but also can be said to be a function of the balance between socio-economic political and technological forces. Last, but not the least, that there are factors other than the health services which help to bring down death rates prior to the organised intervention with technology .

India's health services system has concentrated on equipping its curative institutions with the so-called best technologies in drugs, diagnostic and curative equipment. In doing so, the criterion was rarely the needs of the majority and mostly 'to be at par with modernised countries' and 'to keep up the international standards of medical care!' Thus India opted for the incubator for premature infant care, heart lung machines, and CAT scanner whose high prices ensured their usurpation by the most prestigious urban institutes while the smaller and peripheral institutions in both cities and villages were left without even the most elementary equipment, laboratory facilities and emergency services.

In the preventive field too, the Indian health planners and administrators put all their faith in technology. Instead of using technological interventions judiciously in conjunction with other socio-economic steps, limits of technology itself need to be recognised given the social roots of diseases which lie in the poverty of the Indian masses. The actual pattern of technological growth in medicine shows little concern for either of these. Instead of assessing resources and acquiring suitable technologies, Indian decision makers opted to be governed by technology itself. The inappropriateness of this strategy is reflected not only in the unsuitability of the technology for Indian conditions and contradictory organisational trends but also in the very objective which the technologies actually served."[17]

These had long term implications not only the poor masses of India but also had tremendous implications on the women in India with the growing empbasis on the imposition of invasive family planning and other reproductive technologies on women in India. We shall leave this last section for a later discussion.

GENDER DISCRIMINATION

To briefly account for the impact of technology on women it has been obsered mostly to be negative. Gender Discrimination has been seen in relation to other technologies also.

"In the fishing industry even though women play a dominant role in the production of nylon net fabricated by machines no doubt improve the catch but has reduced women's job opportunities in net-making. The introduction of the auction system in marketing, forces women to compete with large traders, and women have lost much of the control they had earlier through income from fish vending. The new assets created by technology are invariably owned by men. The introduction of trawlers on the whole has been very problematic by creating wide class disparities within the fishing community. Women in this occupation are also exposed to various skin problems on their fingers. But no attention is paid by the government regarding the plight of the women in fishing industry.

What is true in fishing technology in relation to women is true in dairying also. The setting up of new large scale, highly commercialised cooperative dairy units and dairy processing has felt women out

of cash income. In cotton handlooms, wollen cottage industry and hand block printing there has been mass displacement of women."[28] We shall be discussing these in detail in the next chapter.

CONCLUSION:

Thus whether it is mechanisation in agriculture or rapid growth of industries, the introduction of new machinery itself has created problems like retrenchment of labour, especially of women.

Therefore the introduction and use of new technology in a social environment of poverty, unemployment and inequality is just like talking in a vacuum.

Hence, it can be well imagined in this context that unable to explain the government's own fail es (with regard to the issues stated above) the term 'over population' is being used as a strategy to divert the attention of the people. Here too we find that women are being made they scapegoat of the Family Planning Programme and other reproductive technologies.

The crucial questions then arise: as to why this gender discrimination is made; what are social forces that are responsible for the perpetuation os inequality and gender discrimination; what is the social status of woman in relation to her role in the society?

These are some of the issues that will be discussed and analysed in the next chapter.

CHAPTER - I

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CHAPTER - II

WOMEN IN SOCIETY

(I) INTRODUCTION

(II) WOMEN AS WORKER

(III) WOMENS' CONTRIBUTION TO SOCIAL REPRODUCTION OF LABOUR POWER

(IV) WOMEN AND FAMILY

(V) SOCIAL INSTITUTIONS

(VI) SUMMARY AND CONCLUSIONS

(VII) REFERENCES

INTRODUCTION:

The present status of women in India can be understood only in a historical context. Though this can be a subject of research in itself, we would only briefly touch upon the subject, Literature, covering women ordained with the status of a 'social ornament' bearing a glorified image that of a "bearer and nurturer of children". This implied that the entire sphere of women's activity were centered around the pivot of the family and confined within the four walls of her household.

This, however, is not correct because there is also evidence to show women as workers and also as prostitutes in the same period of time.

On the one hand women have been praised as being the cornerstone of the Indian society and have been depicted as the very personification of moral force that binds the family together, while on the other hand, women in real life have been denigrated and subjected to many hardships.

The stark reality of this actual subordinate social status of the Indian women have been brought out vividly by the Report of the Committee on the Status of Women in India (1974).[1]

The marked social inequalities and discrimination that persist against women are almost universal and cut across all class distinctions. But the polarisation that exists between the privileged sections of the society and the masses greatly influences the problems of women. It is therefore women, especially from the economically weaker sections that are adversely affected.

Since time immemorial, women have been suffering from all sorts of oppression and discrimination - be they socio-logical, psychological, economic and biological: all resulting in the domination and marginalization of women inevery sector: agriculture, industry or service, organized or unorganized and within the household. This has contributed to the subservient nature of the social status of women.

Though this is not an extensive study regarding the status of women in society, even then an attempt has been made to assess the role of women in society and the various contributions she makes in the production and reproduction processes. In this Chapter an effort has been made to incorporate and develop a perspective highlighting various socio-economic and political linkages which use the labour of women and at the same time devalue the work done by her. By undermining women's contribution to society these forces accord a subordinate social status to women. With

the help of certain studies done in India, the above issues have been analyzed in the context of:

(a) Women as worker

(b) Women's contribution to labour power

(c) Women and her role in perpetuating the subservient status of her sex through the family.

(a) <u>WOMEN AS WORKER:</u>

(i) Women in Agriculture:

In India since the 1960's agricultural development has been based on technological package to increase agricultural productivity. The effects of the Green Revolution on Women have already been well documented. Although there may be regional differences, depending upon prior patterns of land holding and landlessness, the status of women in agriculture depends upon their class! The most hit are the landless women. Social development in India has been such that it has resulted in many peasant and marginal farmers losing their landholdings, at the same time as there has been crystalization of a new layer of 'Kulaks' (rich farmers). There has been a dramatic increase in the number of agricultural workers within which the number of women is higher and increasing faster

than the number of men. The 1981 Cencus showed that half of all rural female force were wage workers. At the same time, wage work for women is more seasonal and as a result most women are casual labourers. The numbers of female cultivators has declined relative to men, highlighting women's lack of independence access to land[2,3]

On the other hand, the emergence of the rich peasant class has led to the withdrawal of women of this section from work in the fields. However, this has not led to nay rise in the status of the women. Seclusion only serves to hide the labour women perform within the household (which we shall discuss later). Though, it sometimes increases as a result of hiring in wage labour.[4]

Traditionally, women have been involved in agricultural activities with the household. These activities which include household horticulture, live stock rearing, goat rearing and poultry farming etc. has been a regular but rather invisible source of family income supplementation.

Women's contribution to family income from other more 'direct' agricultural activities primarily crop

processing, although more visible are, nonetheless, regarded as part of their domestic activities and do not enter the computations of family income.

Women have been doing all kinds of labourious and pains taking work in agriculture: transplanting, sowing, weeding, harvesting, and threshing and husking of a variety of crops verying from season to season. However, one of the greatest myths is that women do light work. The arduousness of task women perform is never acknowledged (Achanta 1982[5]; Girija Rani, 1975[6]; Agrawal, 1985[7]; Dutt Sharma, 1971[8]; Devdas 1975[9]; Gulati, 1976[10]; India (Ministry of Agriculture) 1979[11]; Lahiri, 1975[12]; Malhans, 1982[13]; Mazumdar, 1979[14]; Mazumdar, 1985[15]; Urencher and Sardamoni, 1982[16]; Mukherji and Jain, 1983[17]; Palriwala, 1981[18]; Sen, 1983[19]; Seth, 1975[20]; Sethi, 1982[21]; Sharma, 1982[22].

These studies have also pointed out that the male wage rate in agriculture as well as in all other occupations in which women are also engaged, is always greater than the female wage rate for similar hours of work. Females are preferred in agriculture by farmowners because they are perceived as cheap and hard working. But the fact is that the landless women in the rural sectors are so poor, oppressed and helpless that they do not have the power to demand rightful wages or equal remuneration as men. The assumption that women do light work and that

therefore they be paid less is wrong. Indian Institute of Bangalore had undertaken a study to disprove this assumption and concluded that women work harder than men. Moreover, specific tasks in agriculture like weeding, transplanting, thought of as "light" work (because women do them) have been found to be more energy consuming, than those done by men. The above tasks involve an average daily expenditure of 85 calories each, while ploughing and irrigation (two typically male jobs) involve an expenditure of 50 calories each[23].

According to 1981 Census, the work participation figures of women and men showed as male 177.55 million and female 44.97 million but in agriculture which is the main source of livelihood in rural India the work force of women are 84.8%.[24]

The women, half of the Indian population who incessantly toil for many hours, who generate massive use values and services in agriculture has been projected as dependent and unproductive". We shall further examine this when we analyse the condition of women in the organized and unorganised sectors of industry and services.

(ii) WOMEN IN INDUSTRY:

The percentage of women workers to the female population is only 13.8% as against 52.53% for male workers which shows enormous under utilization of women power. In the rural sectors they form about 20.5% of the total rural workers of which 50% are agricultural labourers.[24]

From this amorphous mass, we may now, move on to what is termed the organised sector, which covers:

(a) plantation and forestry: 20%

(b) Mining and Quarrying: 2.7%

(c) Transport and Communication:

(aa) Telephone accounts for: 24%

(bb) Railways: 46%

(d) Gas and electricity and sanitary services: 1.7%

(e) Trade and Commerce: 5.6%

[illegible]

(g) Manufacturing: There is already decline

Studies in the sector, done by authors like Sen Gupta (P) 1960[1]; Ranadeo (u) 1976[2]; Renuka, 1980[3]; Mehta(s) 1982[4]; Mankekar (k) 1980[5]; Banerji (N) 1983[6]; Bahl (S) 1966[7];, indicate that in the present socio-economic situation of

the country a majority of women have little to choose in term of employment opportunities in the organised sector. The studies highlight the kind of exploitation women have to undergo in the organised sector also. But the irony of the situation is the fact that women perform unorganised roles even in the organised industry. The women are assigned unskilled work and are paid less even amongst the educated classes.

These studies also reveal that professional and skilled workers are given lower remuneration for equal work as done by men. The inadequacy of labour laws to provide protection and support to women in this sector has been one of the causes in the oppression and exploitation of women - further degrading the social situation of women. Though this is an organised sector, women remain by and large unorganised because of their low social status and thus become targets of social control.

(iii) WOMEN IN UN-ORGANISED SECTOR:

90% of the women are employed in the 'unskilled' and 'semi-skilled' jobs. This sector as revealed by some studies, specific to women's work is characterised by discrimination in wages, exploitation and harassment

by middlemen, inadquacy of market links and lack of organisation.

We have here only some studies to illustrate the status and conditions of women in this sector.

The unorganised sector, where women are generally employed comprises of small plantations, construction work; cotton growing and weaving, match-making, stone quarrying, brick-kiln, handicrafts and automobiles and metal workshops, bidi industry, agarbatti making, chikan embriodery, Coir industry, lace-making and papad rolling etc.

(a) PLANTATIONS:

Sengupta (P) 1954[1]; Sharma (K)[2]; Bhowmick (SK) 1979[3] all analyse and explain that women are employed on temporary basis with hardly even the barest of welfare facilities under conditions that pose health hazards. Women are given the meticulous and pains taking task of just plucking tea-leaves and coffee-nuts in the vast fields under varying weather conditions.

(b) CONSTRUCTION WORK

Central Institute of Research and Training in Public Co-operation: "Women in India", 1975 has discussed and analysed the economic contribution of women,

their life and working conditions of women in construction work, industry and public life. Metha (P) 1982[1] Sengupta(P) 1954[2] describe the working conditions of women construction workers with special reference to legal security and social justice. The plight of women as sweepers, cleaners and labourers in construction in various cities and towns have been discussed.

In stone quarrying women and men are exposed to health hazards including silicosis, accidents, deformity of bone structure back-ache and slipped discs etc., apart from the strain that women in pregnancy are exposed to, due to heavy work.

(c) BEEDI ROLLING:

Studies like 'INDIA' (Ministry of Labour) 1978,[1] JNU Gambhir (G) 1970[2], Jayasingh (JV)1985 [3] Rai (Prabha) 1975[4]; Sebstad (J) 1982[5]; Murli Manholar (K) 1982[6]; Avachat (A) 1978[7]; Mohandas (M) 1980[8]; Bhatti (Z) 1985[9]; Baxi (U)[10]; and many more have brought out the fact that the industry employs predominantly women inbidi rolling and tobacco harvesting which involved great health risks (through inhalation and absorption through the skin) and long hours of work under minimum wages.

As many as 16000-17000 women work in dingy tobacco godowns at a pitiable wage of Rs. 4.80 per day. Walking 5-6 hours in a day from their village they leave their homes before dawn and reach back late after dusk. Working long hours, often 18 hours with barely half an hour for nursing a baby amidst tobacco dust and insecticides, the women often face sexual harassment also. Often their products are rejected for non-compliance. These are the woeful condition of bidi and tobacco women workers; bearing testimony to dire exploitation, degrading social status and powerlessness.

OTHER CASE STUDIES:

DAIRYING: Case studies of women workers in milk production underline the physical burden faced by women workers and the lack of attention paid to their needs for easier access to water, fuel, child care and health facilities. The emergence of dairy co-operatives has been an important phenomenon noticed in some states of India.

Manoshi Mitra 1983 writing on the effects of the Operation Flood (in Andhra Pradesh) on poor and marginal peasant women found that "introduction of dairying

has increased their workload without giving them adequate access to the fruits of their labour. Not only were all, paid jobs in the cooperatives occupied by men, but also men controlled the income from dairying. Moreover, women from these poor families producing milk hardly consumed milk themselves. The little milk these women kept for their families was consumed by men or the male children while are girl children hardly got any. Moreover, with the new cash income from milk, men who usually con--trolled their income had stopped going for agricultural work and hung around on the pretext of looking after the animals.

COIR: Coir is another example of female dominated industry which employs over five lakhs persons. A sample study of 400 women workers found that they are paid 75p to 88 paise for 100 husks. Export orientation and mechanisation have led to monopolisation in this trade. This has led to the displacement of women from the organised sector and their concentration in the unorganised sector.

II. WOMEN'S CONTRIBUTION TO LABOUR POWER

Although women perform essential functions both in the productive and the reproductive processes in the society, their roles in the former are considered marginal

and in the latter central. For the sustenance of the family, the women perform both reproductive and maintenance functions in the family. The maintenance consists of:

(a) physical aspects i.e. cooking, washing, etc.
(b) social maintenance, i.e. transferring values, traditions, etc.

Here we are concerned with the physical maintenance of the labour power which includes upbringing of children and taking care of her husband. A household worker's life consists of carrying out caring duties proceeding from daily maintenance of her husband, her children and herself. This extends giving them empotional support too which calls for giving tender love and affection to her husband and children.

Domestic labour resulting in reproduction of labour power is seen which consists of labour for physical maintenance including pregnancy, child birth, child care, cleaning, cooking etc. and for psychological maintenance such as tension absorption and management, promotion of cordial family relationships, child socialisation and sexual relations.

This household labour which requires tremendous patience, will power, and self-sacrifice, devotion for such painstaking, time-consuming and laborious work does not seem to be visible and therefore the value of domestic labour, though aimed at social production of labour power remains ignored. On the contrary it is termed as "non-work", and considered "unproductive" and therefore remains unpaid.

Further, the impact of the falling wages of the man on the woman has been neglected. Due to the rising prices and at the same time the low wages of them man's work, the standard of living of his family tends to go down. In order to maintain the same status of living (at least at subsistence level) as well as to keep the husband and the children in the same working condition (so that their efficiency of work is maintained) along with her own maintenance for the resuscitation of the whole family, the women has to make tremendous sacrifices by cutting down expenditures on herself and her needs. That means the incurring of lesser wages by the man makes the women not only deprived of her own maintenance but also makes her work more in order to compensate the loss. Now on top of her hard labour in the household, the women has to look for work outside the house or engage herself in an income-earning home-based activity for the physical

maintenance of her family. In this sphere of work, too, discrimination is made by paying her lesser wages because she is a 'woman' and work outside the household is interpreted to be a 'secondary activity' performed in her 'free-time'.

This is true both in the rural as well as the urban sector, where, women from the middle classes go for work. Even they are not spared this exploitation and drudgery. In the rural areas the women are doing even more hard work. Apart from the routine work in the house such as cooking, washing, cleaning, grinding grain and looking after the children, she has also to walk several kilometres to fetch drinking water. In the urban areas, due to the increased social pressures of the family's maintenance, despite the use of modern technology, to help her in her domestic chores, it brings in more of expenditure to maintain those gadgets to keep up the level of standard of living. The cost of maintenance of her husband remains the same and in order to increase his efficiency and save his labour and time, there are extra expenditures on petrol, gas (cooking), house rent and good clothes. The children need good schooling in order to make themselves self-sufficient at a later stage in life. Thus the middle class woman too despite the so called 'liberation' has to survive under the same kind of social pressures.

To meet all the needs of the family, the middle class woman is almost 'sandwiched' between her job and maintenance of her household where she has to slog from dawn to dusk. Her labour still remains unnoticed and uncared for.

Being bogged down by the heavy familial and social pressures the middle class woman is thus made to rather feel guilty for not being able to fulfil her obligations to her husband and children well. This makes her status still low and unworthy.

Moreover, even if she is earning an income over and above her houshold duties, the woman is considered to be dependent on the man because he is considered to be superior and the main breadwinner, of the family. Though the bulk of her income is spent on the family expenses and little left for meeting her own personal needs, she is still considered to be playing a subordinate role because she is a woman and her hard labour is treated as house activity.

Women from poor families who are employed as maid servants suffer from yet another from of exploitation. These women who work in others' houses are not only denied

of their due wages but are also looked down upon by the society as they bear the stigma of being 'domestic servants'.

On top of the drudgeries of their own households, the poor class women have to perforce find time to do the household work of other women (hailing from middle and the upper classes mainly) in order to earn an income for their family's subsistence. They are forced to do those types to work which are regarded as menial tasks like cleaning, washing and sewage disposal etc. Whether employed on full time or part-time basis, there is simply no limit to the extent of the work done. Here too, they slog form dawn to dusk and return home to do their own housework. There are no job specifications, no fixed wage-rates for their hard labour. Very often they are given meagre amounts, with old clothes, and left-over food-stuffs in return. They are virtually treated as slaves, harassed and often sexually assaulted.

Many studies done by authors like Murali Manohar (K)[1] and Shobha (V) 1980[2]; Mehta (AB), 1960[3]; Ramchandran (P)[4] 1958; Elenjinutiam (A) 1960[5] reveal the brutal torture and the atrocities these women have to face for earning an income for maintaining the subsistence of the family.

Thus we see that though the women's labour plays a crucial role in the social reproduction and maintenance of labour power in the society, they are compelled to do excessive hard work and receive less return than the necessary means of subsistence.

III WOMEN AND THE FAMILY

The family produces the necessary labour for the ongoing production in the society apart from other traditional economic functions.

The socio-cultural functions of the family relates to the woman's role within the family in the upbringing of girls, inculcating within them the type of socialisation and imparting such education to make them prepared for the role of a bride, mother and mother-in-law. This perpetuates her own exploitation in the process by placing social constraints on her freedom of movement, educational level and control over her earnings.

Since nuclear families now predominate in most societies due to the weakened bondage of kinship and also migration of men to outside places, households can no longer rely on the economic suport of the expanded

family network. Even then the institution of family is quite strong in India to shape the role of women in the family and her statusquo in the society.

Patriarchal system which is the prevalent from in the society gives value to sons in terms of food, clothing, education, employment opportunies. Thus in middle class families where tension prevails between maintenance of the existing standard of living and prevent a fall in the standard due to the impact of the economic pressures, the woman is not only forced to seek work outside home, but she also becomes the victim to all forms of exploitation including wife-beating, dowry-murders, child-marriages, 'sati' and now to abortion of female foetuses by means of anmiocentesis.

Child marriages are predominant in India because of the family's need for labour besides economic demands. In the process this has led to the creation of a number of households headed by women in later years as a result of early widowhood.

At the tender age of her life, when the child knows nothing more important than play, she is condemned to live a life of captivity by way of marriage in childhood. She hardly has any sense of what is marriage and conjuga-

lity. The family and the society load her with the responsibilities of household drudgery till her death. This led to another trend of social evil of 'Sati' or bride burning in the form of social custom. The patriarchal value system imposed upon women the notion that they lived and worked for their husbands and that they had no right to live on their own after their husband's death. This shows the extent to which the family had control over the entire life of women, leave alone their social status.

The pernicious practice of dowry or brideprice that persist from ages immemorial is viewed as a form of compensation for the addition of a non-productive member in the family, referring to women after marriage. This is a social norm laid down by the patriarchal structures of the society. The family's desire to have sons only is thus linked to the analysis of this social evil of dowry which is an easy way of amassing wealth to meet the challenges of economic demands of the family.

All this results in the women's parents viewing her as a 'burden' and her husband viewing her as 'property'. This view of women as property (in the middle and the poor class families) finds expression in such evil acts

such as sexual harassment often as a revenge against her husband.

The woman from the poor classes in the rural areas are subjected to yet deliberate acts of sexual assault as 'compensation' in lieu of heavy family debts.

Thus we find how the family and the society assert control and impose systems of domination on women in every aspect of her life.

Ideological strengthening of these values have been further perpetuated by other social institutions like:

(a) religion
(b) education
(c) market
(d) medicine
(e) media

MEDIA: Expressions of obscenity in media have hit women hard in terms of violence, abuse of sex, treating female bodies as cheap merchandise and thereby, reaping huge profits. At the same time commercial films are responsi-ble for violence against women. Based on the events

of the movies, women in reality are often exposed to bride-burning and sexual harassment. Yet no where does Indian legislation acknowledge such obscenity on women by the media. Media does not project women's economic productivity role but only as 'mother' and 'sexual object' which degrade status of women in society further. In addition of this the advertisements of bank loans and of the other commodities are advertised openly for dowry thus enhancing the evil practice.

EDUCATION:

Educational institution also perpetuate the discrimination against women. In schools and colleges there are subjects taught which are solely attributed as 'women' subjects like 'Humanities' courses. For instance, Home Science is taught to girls in order to teach tham the 'art' of cooking, food preservation, embroidery, linen washing and mother craft.

There are yet other courses which are basically 'meant' for girls, like, painting and 'Fine Arts', tailoring, fashion and textile designing and beauty-care. Whereas, the courses in photography, electronics, and engineering are considered to be fit for boys.

This discrimination in the educational institutions helps to lower the position of the women in the society because women are perceived to be considered suitable for the 'not so prestigious courses'. They are moulded to develop skills to perform the role of a housewife better.

It may also be mentioned in this context that the curriculum of various agricultural universities in the country includes no reference to the role of women in agriculture, the arduous and meticulous tasks they undertake, as mentioned ealier.

RELIGION:

A cursory look at the traditional Indian value systems reveals the fact that from the ancient to the present day, values are developed exclusively to the disadvantage of women. The accepted religious doctrine that the social position of women is to confine to the house and fulfil her familial obligations inorder to 'build' a 'happy home' imposes a social control on the freedom of women.

Religion projects man as superior and states that woman should worship him because he is considered to be 'earning' for her to survive.

When men and women are involved in the violation of the accepted values, women are punished while men are not. This is so because of 'prescribed' rules and regulations by religion for women.

The diffusion of the ideology that the destiny of womeanhood lies in becoming a mother stresses the importance on the biological role of women.[1] It furthar perpetutes the existing myths[2] about women, such as, a woman a responsible if whe does not bear a child; she is also responsible if she does not bear a male child; a woman is impure when she is menstruating; woman from poorclasses who practised the art of healing for centuries togther were called 'witches' and held responsible for inflicting harm to the society by bringing in all types of calamities, ailments, deaths, epidemics, loss of property and so on.

MARKET:

Businessmen promoted the development of modern medicine primarily for their own economic interest. They were interested in any knowledge which could increase and help in the control of diseases or in the therapeutic techniques which could reduce the duration of illness

and thereby increase the productivity of the workers. Modern medicine has the potential of identifying the specific disease causing agents and providing the possibility of specific remedies against them. Businessmen were therefore interested in the development of this knowledge. It helped to divert attention from the exploitative nature of the society and their role in it. By distributing such servces they were able to project a kind hearted image of themselves and thus reduce the antagonism felt by the people whom they were exploiting.[3]

These businessmen along with the medical establishment were able to proceed with the manufacture of drugs and many other reproductive technologies including the injectable contraceptives (Depo-Provera) and other hormonal pregnancy tests including prenatal diagnosis like amniocentesis for sex pre-selection and sex determination tests. In the bargain, wide samples for being tested have been found to be used among female population. The biggest firms and the drug houses had funds and had facilities to do this work easily e.g. Rockfeller Foundation associated with the Family Planning Association of India to trace wide markets in the third world since their own markets were saturated. Thus we see how the ex-colonies are being used as consumers, women as scape-goats and the technologies sold to them at subsidised rates.

MEDICINE AS AN INSTITUTION:

"Medicine as an institution with its seemingly scientific outlook, took up the role of providing explanations for inequality between human beings by interpreting social realities in biological terms. By associating inequality with biological differences, medicine justified and continues to justify the exploitative nature of human society. In doing this, medicine once again serves the economic interests of the powerful groups in the society.

Medical Theories Justify Social Roles of Women:

Women in the pre industrial society were valued for their reproductive and economic functions because they took active part in contributing to the economic survival of the family apart from specific contribution of giving birth to babies.

However, with industrialization, women took jobs in factories. This meant that women from poor families had to shift their work place from their homes to the factories. But for women from rich families, it meant more and more free time. Women from upper classes no

longer had to do anything more strenuous than sewing or sketching to keep themselves occupied. In fact it became a status symbol for the upper class man and a proof of his success in the world if he was able to afford a wife who did nothing useful but remained a social ornament. These women had only one valuable role - that of bearing children. This reproductive function was seen necessary for the propagation of a "superior" race and medical theories of that time emphasised that these women should conserve energy to perform this supreme task effectively.

Medicine therefore proposed separate biological reasons to explain and justify the social roles of women from different classes. Secondly, they also propose theories that explained differences between men and women with regard to their bodies specially the reproductive organs and tried to justify the inferior position of women based on this biological difference.

Both these oppressive social roles had their own effects on the health of women.

For women from upper classes their boredom and confinement resulted in "invalidism" which was encouraged by the medical profession because it was in its economic interest to do so, since these women could afford expensive and longer treatment.

For women from labouring classes the social condition in which they lived resulted in a host of diseases. In reality it was these women who really were sick, because of under nutrition, bad working and living conditions. It was not either in the interest of medical profession or the businessmen to focus their attention on the primary causes of ill-health in this section of the population. Instead they warned the upper classes not to mix freely with the women from lower classes as they could spread disease.

With the development of Psychoanalytical theories in medicine women were not only seen as being inherently physically weak or sick, but also that female 'personality' was 'defective' and the main function of the women was to reproduce only. But instead of helping them to breakout of their oppressive role, this theory helped to reinforce social oppression on women by stating that it was unnatural for women to rebel a against their "natural role" of being housewife and mother.

The upper class women were thus left with few activities which could channelise their energies. They were prevented from participating in intellectual or economic activities which were open to the men of their class. "the sick role" did not present a pleasant experience because of the painful medical treatment. In an effort to get rid of the prescribed 'sick-role' by medical science, these women began to look for opportunities to channelise their energies. They took interest and started developing skills in the 'art of caring for the sick. Thus emerged the occupation of 'Nursing' for Women.

It was in this social context that new occupation began to be created for women which were basically an extension of the women's role within the family into the outside world. Nursing was one such occupation which became a respectable profession for women in upper classes. It was seen to be a natural vocation for women as this ability of taking care of the sick was a quality of womenhood since women were bearers and nurturers of children. It was also thought that since nursing did not tax the mental abilities of women, it was biologically well within her capacity to undertake these tasks.[34]

However, it is worth noting that though women were considered fit for nursing they were thought to be unfit for doctoring. Morever doctors thought it unnecessary to share their knowledge with nurses as they believed that the predominant task of the nurses was to obey the doctors faithfully. Therefore women in the nursing occupation have hardly any decision making power.

SOCIAL ISSUES:

A. Since women are not defined as workers within the ruling ideology, women's work is no longer treated as productive work as a result of her so-called sexual inferiority.

The definition of 1971 Census reflects the idea, that a women's work outside the house is considered as an extension of her housewife's role: an activity that provides an additional income to the family.

B. This role of the housewife is not protected by any labour laws and hence becomes the hunting ground for unchecked exploitation and further decline in the social status of women.

(i) The propagation that women are housewives basically is not only a means to keep their wages below the subsistence level, but also keep them disorganised as workers.

(ii) While the government's entire strategy of economic development is intended to increase the economic standard of the people (by increasing their purchasing power), a more direct strategy was adopted, i.e. by fixing minimum wages for all workers based on the criteria of nutritional requirements which actually differ according to the type of work done.

In this context, it may be emphasised that if everybody in India were to receive wages based on the calculation of caloric requirements, the labourers should receive the highest amount of wages. In fact their wages are the lowest which reflects and re-inforces that the ruling class looks down upon people doing physical work more so the women.

(iii) Another limitation of the Minimum Wages Act which affects women is that the minimum wages fixed by the government does not take into account the evergy women spend on household tasks because these are considered unproductive.

In a study by ICMR in 1981 it has been observed that the evergy spent in a rural household by women, men and children in all tasks necessary for survival is 53%, 31% and 16% respectively.[5]

Such discrimination bring home the fact the low social position women bear in the society.

C. When translating work done by women in a day, mathematically, it has been seen that in a family of six, one single women produces that amount work that should actually be done by three women in a day. This burdensome work of women is considered valueless and non-income-generating".[6]

D. Whenwe analyse the situation of the women engaged in work outside the house, we find that the scene may be different, the occupation different but the essentials of the story remain the same - be they plantation workers domestic servants or beedi rollers, it is the same unvarying story of long hours of work, poorly paid, pains taking, meticulous and work that needs patience and time. This work of women is labelled as 'unskilled' work. The very use of terminologies of 'skilled and 'unskilled' undermines the amount of arduous labour the woman has to put in towards social reproduction of the society which goes unrewarded.

E. The work that women do get slotted into specific sectors and thus termed as women's occupation, therefore they become less paid jobs.

F. It has also been observed and analysed in the study of poor women that "because women aim to make up for a deficit in the family level of income which is already very low, they are prepared to take up any job and at any rate.

G. Sexual division of labour has no rationale and has little connection with the special biological role of women because child-bearing in reality is given no recognition. Women work at hard tasks during pregnancy, and when motherhood creates speical needs, they are deprived of even their basic needs. "Work" simply cannot improve their status under such exploitative conditions. Given their social disabilities and discrimination, they are unable to enter the organised sector. Their need for earning an income or obtaining bare necessities drive them into the unorganised sector which is the only option left open to them. That is the reason a large number of women are engaged in home-based production which is accounted for 'free-time activity' and not an 'income'.

I. With there being no fundamental right to work, coupled with marginalisation of women's work, progressive Acts

like Equal Remuneration Act 1975 simply do not materialise. Further, the legislations like Factory Act or the ESI Scheme do not cover the majority of women workers (94%) who are in the "unorganised sector".

J. In the urban areas discrimination is not only made in wages and promotion in jobs but also the age factor. For instance while a man as steward can continue to work upto 55 years, there is an age bar for retirement of the women which is limited to 40 years. The argument forwarded by the management is "their looks - which fail to please the customers".[7]

CONCLUSION

With constant humiliation and harassment women in India not only are led down to excessive hard labour but also forced to bow down to the unmet challenges posed with predominant patriarchal value systems, and other familial and social institutions. This fact lowers her position in the society further and exposes her to enormous exploitation.

SUMMARY SECTION

In this chapter we have analysed the role of women in society in relation to her work, her contribution to labour power and her role in the family. We have also analysed the various social institutions that are basically responsible for lowering down the social status of women. In relation to work, we find that despite the fact tnat form the major work force in India today, her immense contribution to the social production has not been given due importance. On the contrary, discrimination is made in terms of longer hours of work and cheaper wages as compared to men for the same type of work and are exposed to greater occupational health hazards. 'Housework' is generally considered 'unproductive' and remains 'invisible' and therefore unpaid. All this is so because women are regarded as 'social ornaments' and their contribution to labour power is ignored. This conceptualisation of women as 'housewife' is the basic reason for her exploitation and her subordinate social status. This is the reason for gender discrimination in which technology plays a dominant role to impose social control on women.

We shall analyse this in relation to reproductive technologies in the following chapters

CHAPTER - II

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AGRICULTURE

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CHAPTER - III

REPRODUCTIVE TECHNOLOGIES FOR WOMEN

(I) INTRODUCTION

(II) ORIGINS : HISTORICAL PERSPECTIVE

(III) HEALTH IMPACT STUDIES OF CONTRACEPTIVES.

(IV) CONCLUSION

(V) REFERECES

INTRODUCTION:

One of the major areas of scientific and technological interventions is the area of medicine and health. Within it the development of research in the .sphere of biotechnology and intervention into the reproductive system is one very significant area of study. These development have critical implcations for not only women but the entire human organisation.

The medical establishment by and large has "allowed technology to dictate diagnostic techniques and treatment regime without always subjecting these new methods to adequate assessment and scientific medical scrutiny, let alone psychological, social and economic analysis".[1]

It is equally true that the unrestrained application of medical technology has led to a situation where their current uses are inappropriate, counter - productive and not in the interest of women as such. [illegible]. In other words, it is out of control and is still being used.

The researchers busied themselves in developing reproductive technologies but did not pay adequate attention to their implications on the social and

the health status of women. So far little attention has been paid to issues such as:

(a) What kind of research receives priority in given context;

(b) Who carries out that research?

(c) Who makes policy decisions in these reasearches?

(d) What are the long term implications of these policies?

It is in this context that our study will focus on:

(a) Who are these women who are experimented upon?;

(b) How are they selected for trials?;

(c) Are any ethical norms being observed?;

(d) Do these women know that they are being experimented upon?;

(e) In case of failure of experiments, are they given any compensation?;

(f) What are the risks of foetal defects if encountered with the drugs and hormonal tests?;

(g) Do the women have the freedom to choose these technologies?;

(h) What are the social implication of these technologies?

We shall analyse here the developments in science and technology related to specific reproductive technologies and their implications on women, especially Indian women.

The scope of these technologies is very wide covering contraception, abortion, pregnancy, child birth and now conception.

We will first classify the reproductive technologies. Not all technologies will be discussed. Only the most prevalent ones will be taken up for review.

CLASSIFICATION OF REPRODUCTIVE TECHNOLOGIES

1. CONTRACEPTIVES:

   (a) Sterilisation techniques
   (b) Abortion selective: Aminocentesis
   (c) Intra- Uterine Contraceptive Devices
   (d) Hormonal drugs: Injectible Contraceptives and oral pills
   (e) Norplants : skin Implants

2. TECHNOLOGIES IN PREGNANCY AND CHILD BIRTH:

(a) Pregnancy Diagnosing Tests

(b) Ultrasonography

(c) Labour technologies.

2. CONCEPTIVES.

ORIGIN OF REPRODUCTIVE TECHNOLOGIES:

A review of the social history of reproductive and genetic technologies reveals that these have been actually developed in the West in the 19th Century.

A brief review of the growth of some of the technologies shows how they emerged under certain specific social pressures. The health of the women was most of the time an excuse rather than the main reason for the evolution of these technologies.

ORIGIN OF CONTRACEPTIVE TECHNOLOGIES:

Contraception has been an issue of concern since time immemorial. A museum at Toronto reveals three hundred exibits which trace the evolution of contraceptives

from 1500 BC. They include an Egyptian recipe of acacia and dates ground fine with honey mixed with moistened and wool used as tampoons which proved effective contraceptive since body fluids caused acacia to forment and produce lactic acid, a recognised spermicidal agent today.[2]

Though the traditional methods of coitus interruptus and breast feeding were being practiced as contraceptives but when a certain group of practices are 'expounded' by printed authority and dubbed as scientific and modern it is bound to replace the old methods. In recent years however, the subject of population control and the use and abuse of reproductive technologies have generated increasing popular attention and controversy raising a host of relevant questions and focussing on a number of vital inter-related issues.

To begin with, Birth Control Propaganda had already begun among the working classes regarding the use of such methods of contraceptions as withdrawal, the condom, the sponge and syringing, as written in a book on human reproduction, "The Fruits of Philosophy" in 1832 by Charles Knowlton,[3] which underwent nine editions in seven years.

By this time Annie Besant along with the advocates of birth control propagated the effiecacy of douching and sponge instead of traditional methods like abstinence, coitus interruptus, late marriage as a check to population control.

In 1916, "The Wifes Hand Book" was published giving full details of the suppliers of preservatives, pessaries of all kinds, enema syringes, soluble suppositories, cervical caps, diaphragms and condoms.

Meanwhile, Mrs. Margaret Sanger wrote "Family Limitation" and from the outset, Sangers interest was to limit the 'excess' fertility of the poor. It has been analysed that as she herself hailed from a poor family of eleven children of a tuberculer mother, she continued to believe that high fertility was the cause of poverty and oppression. Later in life Mrs. Sanger stressed her connections with the Mathusian League in England and in Holland for she realised that "power and dignity were to be gained from enlisting the support of the rich, principally her suitor, a millionaire.[4] In 1922 she made trips to Japan, Korea and China to introduce the Asians to her panacea for all the ills, birth control to Russia

and India in 1935, to China and Japan again and thus established herself as a world leader in the birth control movement.

It is from henceforth that the modern population control movement traces its lineage back to such exalted beginnings. Family Planning Propaganda has continued in the some tradition, in cartoons showing endless chronic versions of starving 'black' children bombs in 'black' women's womb and so forth. Marie stopes, another contemporary to Sanger devised the cervical cap for women "infact her own obscurantist tactics were a principal cause of institutionalisation of birth control and the creation of a Vast money spinning contraceptive drug empire in the West." [5]

Meanwhile a Eugenics Council was set up and the "co-operation of the eugenists was essential to the development of institutions of birth control in 1930, because they had the unique combination of statistical skills along with the basic assumptions which underlay the whole attempt: to curb the birth rate of the lower classes of the society.

The groups run by the socialists and the liberals however insisted that their motivation was the first concern for the health of the mother, second, for the health of the child, third, happiness in marriage, fourth, making available to the poor the means to control their fertility already successfully deployed by the ruling classes. Thus the concept population explosion was brought about in an bigway and created the "myth" that the poor classes of the Society were responsible for eating away the maximum resources.

ORIGIN OR ABORTION AS CONTRACEPTION:

Historical documentation on abortion before 19th century appears to be almost nonexistant. The great philosophers of the ancient Greece, Aristotle and Plato believed that motherhood was women's duty to their husbands and the state and should be controlled for the greatest benefit to both: Abortion was visualised as a tool of population control.

In efforts to prevent pregnancies and also terminate them in early months, women have eaten roots, plants, swallowed concoctions throughout the prehistoric

times of hunting and gathering stages when they had to move from place to place for a living. Plant substances acting as abortifacients have been found which "influence the reproductive cycle at all stages from the suppression of ovulation to the creation of vaginal or cervical environment hostile to pregnancy"[6]. However no epidemiological studies have been done so far. Scanty literature in abortion exists in Ayurvedic, Unani and Tibbi systems of medicines. Forceps, dilators and curettes almost identical to modern instruments for dilation and curettage (D and C) have been found in the excavations of Pompeii and Hernaculaneum. The word abortion itself derives from the Latin "aboriri" which means to fail to be born. Abortion is a universal phenomenon where women have been trying to either intercept pregnancy or control the fertility. With the advent of industrialisation the urban proletariat went to factories to earn a living and abortion became and increasingly common and significant part of women's lives. In the U.S., the campaign to outlaw abortion was built as a 'demographic panic' over falling birth rates of the white, protestant, Americans at the time of heavily catholic immigration. Population control has also been a primary concern of the Soviet Union where abortion was first legalised in 1920 as a stop gap

measure to keep the birth rates low and free women for factory work during the economic collapse which followed the revolution.

The evolution of social ttitudes towards motherhood, of medical technology and the practice of the birth-control and consequently the woman's experience of abortion have been determined "by the patriarchal imperatives of Western civilization - more so of the ruling classes directly related to the economic and political expedients of the population control".[7]

ORIGIN OF CONCEPTIVE TECHNOLOGIES:

Women in traditional societies like India have been always dominated by the patriarchal system which regards infertility status of woman as a curse. This curse of sterility is regarded as a social stigma for the infertile woman who is even barred from attending any social functions because she is considered to be inauspicious. Childlessness is invariably blamed on the woman "who passively accepts the verdicts and spends rest of her life seeking out one prospective healer after another. If she is fortunate not to

be thrown out of the house, she will eventually have to share it with a second or third woman. Such atrocities on women have far reaching social implications which provide a glimpse of her social status in such a society like ours. Barrenness is associated with sin and a punishment from God, while the birth of a child, especially the male child is considered to be a good omen."[8] Such discrimination against women and the girl child is present since time immemorial.

Infertility had been of great concern even in the West. The Church along with the ruling classes were interested to preserve the purity' of the white race and also increase their numbers.

This had become a golden opportunity for the medical establishments along with the business collaborators to specialise in "treating infertility", performing all kinds of delicate interventions to correct all blockages and abnormalities of the uterns. They claim this to be their triumph over infertility. Gradually, more and more sophisticated technologies are developed with the pre-text of "helping" the childless couples to satisfy their needs of begetting children. Thus, developed the testtube babies through

the techniques of In-vitro Fertilization - Embryo Transfer.

The medical scientists also argue that if heart transplants, coronary by-pass surgery and the like are becoming popular, then what is the harm in making use of these new reproductive technologies?

Tests like artificial insemination, etc. have also been developed which recently have given rise to the controversy of surrogate motherhood. This has been developed so as to help the childless couples to have babies, especially in the wealthy countries.

ORIGIN OF TECHNOLOGY IN PREGNANCY AND CHILD BIRTH:

"The "ideological" roots of antenatal and child birth movement in the West lie on the premises of screening the population of basically normal pregnament women in order to pick up a few who were at risk of desease or death.

In the 18th and the 19th Century antenatal care as a concept did not exist. In general, pregnancy and child birth was traditionally seen as the natural process of a distinct type of social behaviour.

Abdominal massage and the process of 'blood-letting' were some of the practices that were done for induction of labour to ease the process of child birth.

The evolution of antenatal care began after The Boer War (1899-1902) in South Africa, which revealed the low standard of the male population recruited to fight in that war. This revelation forced political attention to the poor socio-economic conditions of the people of Britain.

It was also realised a) that the health of the adult was dependent upon the health of the child; b) that the health of the child was dependent on the health of infant and the mother.

In 1902 the Midwives' Act was enforced which enabled the entry of medicalmen into the so called domain of the midwives. Meanwhile, voluntary organisations like the Womens Cooperative Guild pressurised the government to initiate shemes for improving the health of pregnant women and nursing mothers by the end of the First World War. This was the begining of inclusion of medical component in Mater ty and Child

Welfare. Emphasis was also laid in the prevention, cure and amelioration of morbid States arising in pregnancy.

In the second decade of 20th century, antenatal care was hailed as the universal panaces, the cure for all reproductive illnesses.

By the years leading to Second World Wars, endocrinal research regarding the physiology of female reproductive organs developed. This enabled obstetriciaus ultimately to claim an unprecedented degree of control over mysterious working of the womb and the knowledge of reproductive hormones.

This set the scene for revolution in reproductive technologies like hormonal tests in pregnancy, foetal radio-graphy ultrasonography hysteroscopy and amnioscopy.

The developments in aminioscopy led to techniques like amnocentesis, basically to study the congenital abnormalities of the foetus.

The development of technologies for intra-uterine foetal surveillance led to the innovations of technologies to control labour, like artificial rupture of membranes and intervention with drugs like Oxytocin to hasten the process of labour. Thus developed the concepts of induction of labour and elective surgery or Caesarean Section.

Thus the social context of maternity and the traditional rituals in child birth got reflected into a medical phenomena with the diffusion of the new ideology which saw the act of parturition as a pathological condition."[9]

We shall be analysing futher these aspects of origins of reproductive technologies throwing light on social forces which led to the medicalisation of pregnacy and child birth in India in later Chapter.

The above reviews throw light on the importance of the social, political, economic and cultural forces in bringing out the nature and direction of the technologies. Some of the important factors which are apparently active can be summarised as follows:-

(a) Growth of professionalisation has promoted the technologies through which social control on women has been imposed.

(b) Medical experimentation on women began to use them as guinea pigs

(c) Development of professionalism in medicine brought about medicalisation of every aspect of women's lives.

STUDIES ON HEALTH IMPACT:

In this section we briefly review some of the studies which have been done to evaluate the medical impact, i.e., utility and disadvantages of the reproductive technologies.

As far as impact studies are concerned, we concentrate here on Contraceptives only but reviews of social implications include all the technologies mentioned in the following table:-

A. CONTRACEPTIVES:

1. Sterilization:

i) Laparascopic

ii) Tubal Ligation.

2. IUCDs

3. Oral pills

4. Injectable Contraceptives.

B. TECHNOLOGY IN PREGNANCY AND CHILD BIRTH: Hazards of Pregnancy tests.

C. AMNIOCENTESIS: Used for Sex Determination and Sex Pre-selection in the context of Abortion.

D. CONCEPTIVES:

<u>IMPACT STUDIES:</u>

STERILIZATIONS:

(i) In 1982, ICMR conducted a study, "Collaborative Study on Sequelae of Tubal Sterlization".[10] A total of 32,177 cases of sterilization operations performed at 13 teaching hospitals in different parts of the country in2 years time from 1976-78. Demographic characteristics of the aceptors even young women with lower parity had come foward for sterilization,

average age being 28 years. Women with at least one living son had higher acceptance than those who had no living son and acceptance was higher from southern States of India.

Sterilizations were done by the following methods

(a) Laparascopy
(b) Minilaparatomy and
(c) Culdotomy.

An analysis of deaths and complications reveal only 235 cases were done by laparascopy and culdotomy between 4-6 weeks of post-partum period.

Though there were no deaths in any of these cases, the incidence of visceral injury was very high in late post partum cases of laparascopy.

When the operation was done as an interval procedure by either minilaparatomy, laparascopy or culdotomy, both mortality and morbidity were higher than in the post-partum cases. Three deaths out of 4,848 interval operations occurred due to general periotoni tis and cardiorespiratory arrest. When sterilization was combined with MTP by suction evacuation, the mortality and morbidity was higher than when the operation was done in early post-partum cases. Two

deaths occurred in 6053 ligations done concurrently with suction evacuation. When sterilisation was done with hysterectomy, three deaths occurred due to general peritonitis and intestinal obstructions occurred in 3468 cases.

Mortality was highest when ligation was done along with Casearean Section (15 deaths in 2407 cases). There were 18 cases of ligation failure in 11,688 cases. There were highest failure rates (5.88 per 1000) in cases of laparascopy.

The principal side-effects encountered on follow-up were menstrual abnormalities, psychological sequelae, wound sepsis, keloid formation, incisional hernia, scar endometriosis, dyspareunia, dysmenonrhoea and pelvic infections.

The commonest menstrual abnormality encountered was menorrhagia (excessive bleeding), the overall incidence of which was 5.1% after the operation. Prior to the operation the incidence was only 1.3% indicating that the increase in mnorrhagia is in some way related to the operation performed.

The incidences of pelvic infection was also found to a great extent increasing following sterilisation, be it tubal ligation or laparoscopy.

II. In 1974 Rao, K.B. Rajan S; and Malik SE,[11] conducted a study, "Mortality and Morbidity Following Tubal Sterilisation" of 7520 women during 5 years (1969-1973) in the Government Hospital for Women and Children in Madras. These women were in the average age-group of 26 years and had three or more living children hailing from the poor strata of the society. They were motivated mainly with the idea of limiting the family with monetary incentives.

Of the above cases, 5,166 (68.7%) were puerperal, 1,255 (16.5%) non-puerperal and 1,099 (14.8%) were concurrent with termination of early pregnancy.

Overall morbidity was seen in 618 cases or 8.1%.

Morbidity and Mortality Data Show:-

- Haemorrhage in 55 concurrent sterilisation;
- Rectal injury in 2 vaginal procedures
- Pyrexia in 464 cases (6.1%);
- Pelvic infection in 12 cases;
- Abcess and peritonitis in 2 cases each
- Deaths occurred in 3 cases all in the puerperal group (0.04%).

III. In 1972, Soonawalia, R.P. [12] Carried out 5,000 cases in mass camps and 2,269 cases under field conditions in Bombay. These women who were pregnant under 10 weeks and had MTP and Vaginal sterilisation at the same time again belonged to the poor classes with 3 to 4 living children. Of his series, 31 women needed hospitalisation for 48 to 72 hours. Several reasons were attributed to this route of operation: minimum morbidity and mortality, early ambulation, working women to be back at work soon.

Despite these big claims, there were post-operative complications like distension, pain in the abdomen and peritonitis.

The 'success' in achieving the high targets in sterilisation is because of the fact that women consented readily for the technique as the word 'operation' was not used and they were told that a simple stitch would be put in the vagina to safeguard them from further pregnancies.

IV. In 1972-73, 49 Mass Sterilization Camps were Organised in Kota District in Rajasthan. [13] A study of Mass "Vasectomy Camp" was made by the Directorate of Medical Health and Family Planning Services'.

Demographic and Evaluation Cell of State Family Planning Bureau. 44 Camps were situated in the rural areas. Out of 9,426 sterilizations, 9,240 vasectomies and 186 tubectomies were performed.

About 91% of males sterilised were in the age-group of 30-49 years and the wives in the age group of 25-44 years. 50% of the acceptors were illeterate, 89% were employed in agriculture, labour and services. 75% of the case were from a lower income group. The average number of children per acceptor was 4 while 68% of the women had 3-5 children.

The commonest complication in the vasectomised cases was wound infection locally. Nothing is mentioned about the small number of tubectomy cases. It has been indicated that "the vasectomy camp proved that the yearly output of cases can be ten times more". But despite such low occurrence of complications in vasectomy cases, female sterilisation has been consistently followed. This indicates and confirms the social control imposed on women by the society because of the low social position of Women.

V. In 1972, Dutta Chowdhary, A., Paroi, S.K. and Pahari, B.[14] have made a study "Report on Female Sterilisation Operation Cases" at the Camps in the district of Midnapore, West Bengal".

A large state tubectomy camp lasting for 4 weeks was organised in a District Hospital in West Bengal. The target of 1000 operations was crossed and 1,241 women were tubectomised.

Socio-economic and demographic information states that the women hailed from the rural poorer sections of the society with 4-5 living children. They were mainly agricultural labourers. Financial incentive was the main reason of the more number of women being 'lured' for achieving 'targets' for sterilization.

The commonest complication was menorrhagia, pain in the abdomen, pain in the back region and pelvic infection and general weakness in these cases.

VI. In 1968, Rao, A. Padma[15] presented a report "Experience with laparascopy in a Developing Country".

This paper gives the author's experience with 358 laparascopies performed by her in the medical college Hospital at Manipal, South India.

Socio-economic and demographic characteristics of the sample were almost same as in other states in India. Women were poor, with 3-4 children and mainly from the rural areas. There were some women from the urban areas too, though no specific data is given in this regard.

In the first fifty operations, 236 electric coagulation of the tubes were performed. This resulted in accidental coagulation of the intestines in one case. There were multiple puncture of the mesentry resulting in failure to push in the intestines in another case. Both required laparatomy. There was another case of cardiac arrest after administration of intravenous pethidine and local anasthetic.

The other complications the were encountered were ectopic pregnancy, uterine pregnancy, hacmorrhage, peritonitis, rectal fistula and disturbed menstrual cycle.

VII. In 1976, "A Follow-up Study of Persons Sterilised at a Mass Camp at Doddaballapur Bangalore District" by V.S. Badari and P.M. Kulkarni [16] was carried out.

The camp was not selected randomly but acceptors were drawn from 2 PHCs. Although majority came from rural areas, a good number of them turned out to be from the town. This town is 39 kms away from Bangalore city and had 1,54,636 population according to 1971 census. There were 259 inhabited villages in the Taluk. The mass camp was jointly done by the 2 PHCs at Doddaballapur and Kanaswadi.

85% of the acceptors were women. They had on an average two or more living sons and one living daughter indicating an incline towards 'son-preference'. They had 4 or more living children.

A majority of the women (61%) were in the post partum amenorrhoea at the time of sterilization. 70% of female acceptors did not attend school. 28% of male acceptors did not attend school.

71% of the tubectomised women were housewives (stated to be non-workers) 23% women worked in agriculture. 13% of the vasectomised men worked in agriculture too. Among the vasectomised men, 69% were crafts-men, and labourers in factories while only eight of them worked in agriculture.

The reasons given for accepting sterilization are: 79% women and 69% men for economic betterment respectively; 27% women and 31% men stated health reasons; 11% women stated pressure from the government; 58% women accepted tubectomy because they were afraid that vasectomy might keep their husbands sick and hence out of work for a long time.

Follow up care showed 12% women did not take rest at all 33% took rest nor 2 weeks and only 7% for 2 months. Among the men, 25% were on bed rest for nearly 2 weeks. This proportion is quite high considering the simplicity of the vascetomy operation. Therefore the fear that a vasectomy might keep a man out of work for a long time does not seem justified. Moreover it simply shows how grossly woman's health has been neglected. Though, ironically she is 'advised' for bed rest after sterilization, but in reality she has to perforce continue to work at the cost of her physical ailments too.

Post-operative complications were divided into major, minor and other complaints which included pus formation, incisional hernia, abdominal pain and fever in tubectomy cases.

50% men did not resume normal activity within 2 weeks. 23% women started working normally after 2 months.

However, after highlights of the camp reveal that only 25% of the target of 10,000 sterilizations of the district was achieved.

VIII. Yet another study in 1989, made by Sabla Sangh, "Family Planning Policy Aid People's Right to Health" presented a report on "The socio-Medical Impact of Sterilization on the lives of Women in Four Resettlement Colonies in Delhi".[17] One of objective of the study of 171 women was to assess the impact of sterilization (tubectomy) on the health of women.

These are women from different state whose families had migrated to Delhi for jobs. Some of these women were employed as factory workers, domestic servants and workers in government factories. More than 50% women belonged to age groups 20-29 years.

This study observed the impact of sterilisation on women's health as very grave. The alteration in menstrual cycle was as follows:

- dysmenorrhoea - 45.61%
- menorrhagia - 23.39%
- polymenorrhoea - 19.88% (reduced cycle lengths)
- irregular periods - 19.13%
- scanty periods - 18.71%

other complaints reported were:

- increase in vaginal discharge following sterilisation (40.94%)
- Pelvic Inflammatory Disease: which

include symptoms combined with increased menstrual bleeding, pain during intercourse and increased vaginal discharge.

- weakness - 54.99%
- backache - 54.97%
- giddiness 50.88%
- flatulence - 35.67%
- breathlessness - 19.88%
- distension of abdomen - 15.79%

The failure rate was 3.5% even higher than that of the ICMR study. Hence if epidemiological studies are done in larger part of the country will show further 'eye opening', breathtaking results on the consequences of sterilization on the health of women.

INTRAUTERINE DEVICES (IUCD)

There are easily a hundred and fifty studies of IUD performance in India. They vary not only in their findings but also in quality. Most of them are based on case - cards collected from clinics. Therefore, they do explain what sampling techniques

were used or whether those women who came to the clinics were typical of the population.

However, a review of the published studies do give an accout of the extent of the harmful effects of IUCDs on the health of women. There are, however, certain points on which virtually all the studies agree. Symptoms of bleeding associated with IUD are by far the commonest reasons for the removal of the device. To quote WHO in 1966."......[18] Bleeding may manifest as menorrhagia or metrorrhagia which... may be intense enough to create alarm for both patient and the physician".

Such increased bleeding has many adverse implications because women in India are already malnourished and anaemic.

STUDIES:

I. In 1967, Murthy, PVR; Mohapatra, P.S. and Prabhakar, A.K.[19] conducted a study in 19 urban IUCD Centres distributed all over India. The size of the sample was 20, 695 women.

There have been difficulties in pooling the data from different individual studies as they indicate widely varying patterns of dropouts, complaints and age - structure and they even did not follow uniform pattern of collection of data. However, despite such variations, in or the Status of IUCD and their consequences on the health of the women, all the study areas have been put together which give combined results.

Some socio-demographic characteristics of the population under study reveals that 60% of the acceptors belonged to age-group of 25-34 years. 22.9% had parity of five to six. The mean number of living children was four. A clear preference for male children was observed among the acceptors.

Complications recorded were as follows:

(a)	all complainst:	53.4%
(b)	Bleeding:	9%
(c)	Pain	6.4%
(d)	Bleeding and Pain:	6.6%
(e)	White discharge:	5.9%
(f)	Prolonged and heavy meases:	10.7%

(g) Inter-menstrual bleeding: 5.0%

(h) Pelvic infection: 0.4%

(i) Psychological: 0.8%

(j) Suspected and confirmed pregnancy: 0.7%

(k) Others: 7.9%

The number of removal of IUDs due to complaints were as follows:

(a) Removal due to excessive bleeding: 25%

(b) Bleeding and Pain: 22.6%

(c) Inter-menstrual bleeding: 17.1%

(d) Prolonged and heavy menses: 15.2%

(e) Pelvic infection: 32.1%

(f) Suspected and confirmed pregnancy: 33.6%

(g) Desire to conceive: 69.4%

(h) Husband's objection: 56.7%

This study not only reveals the extent of the physical problems the women have to face as conservences due to side effects of IUD in sections but also that husband's sbjection - as one of reasons for removal of IUD is an evideuce of the social control imposed on women in 'decision-making for their reproductive rights.

II. In 1965-66, Sohan Singh[20] conducted a study of Lippes Loop on 4,604 women in family welfare clinics in Chandigarh. 86.4% women came from the urban areas and 12.8% from rural areas and in 0.8% of the acceptors residence was not recorded.

About 55.7% women were below 30 years and 44.3% above this age. The single largest group of women comprising of 20% of the total was in the age group of 25-29 years, having 3-4 children. 63.5% accepted loop when they had one or two living sons.

Complications recorded were as follows:

(a) Bleeding: 50-60% cases

60% cases of removals accounted to bleeding

(b) Pain: One tenth of the cases

Poor follow-up and possibly poor recording account for low rates of removals and expulsions.

III. In 1966, Sarah Israel[21] conducted a study, "Follow up Study of Intra-Uterine Contraceptive Devices" in Bombay on 1,497 women.

These women who had maximum number of insertions were in the age group of 25-30 years. They hailed

from the neighbouring villages of Bombay. The Family Planning Training and Research Centre (FPTRC) carried out IUCD insertions in 1,497 women.

Complaints of different kinds were recorded of which maximum cases were of:

- bleeding: 491 cases
- menorrhagia: 225 cases
- backache: 245 cases
- leucorrhoea: 109 cases

There were other cases reported of 0.9% cases of pregnancy occuring with the loop 'in situ' which resulted in abortion. There was a case reported that the loop could not be located and hence laparatomy had to be done. It was found embedded in the uterus. 83% of the the acceptors got loops removed because of medical reasons like bleeding, cramps, backache etc. and 17% due to planning of pregnancy or fear of injury and unable to located the thread properly to check its right position in side the uterus.

IV. A study was done by Mukerji (K); Dey(U), Roy(S), Sen(P) and Banerji (S)[22]. "The Concept of Dysfunctional Uterine Bleeding with IUCD".

The study was carried out at the Family Planning Clinic attached to the Eden Hospital, Medical College, Calcutta. Total number of cases was 3,935.

Of the total number of cases, only 657 i.e. 16% reported abnormal bleeding. Nature of analysis was as follows:

(a) age group and incidence
(b) nature of bleeding and incidence
(c) particular variety of menstrual flow irregularity and incidence.

Maximum number of women were from 21-30 years of age.

The number of cases reported for:

(a)	continuous bleeding since insertion:	125 cases
(b)	off and on bleeding:	185 cases
(c)	incrased flow:	347 cases

Type of menstrual irregularities show:

(a)	menorrhagia:	489 cases
(b)	metrorrhagia	116 cases
(c)	increased flow:	52 cases

Health Impact Studies of Hormonal Drugs:

HEALTH IMPACT OF ORAL PILLS

1. In 1967, the Government of India initiated a pilot project for studying various aspects of oral pills under field conditions in selected clinics throughout the country named "The Oral Pill Pilot Project in India" by Mohapatra, Sugathan, Sharma and Mehra.[23]

By the middle of 1969, the number of pill acceptors was 12000.

In this study 2,442 cases from 48 clinics were selected. Complete schedules were available for only 1,512 cases from 36 centres because no follow-up reports received from three States: Assam, M.P. and Rajasthan.

Socio-demographic characteristics reveal that maximum acceptors were from the age group of 25-34 years. The number of living children on an average they had was 3-4. 52.8% were illiterate and 70% of the pill acceptors had monthly income of less than Rs. 200/- p.m. Almost one fourth of the pill acceptors had used IUCD and condom before.

Complaints of side-effects were found in at least two third or 66.7% of the acceptors:

(a) Heart palpitation: 78.4%

(b) Body pain: 45%

(c) Heavy menstrual bleeding: 82%

(d) Scanty bleeding: 46%

(e) Allergic reaction: 55%

(f) Pain in legs: 53.5%

(g) Increase in weight: 33.3%

(h) Pain in abdomen: 51.9%

(i) Backache 51.9%

(j) Vomiting: 82.8%

(k) Dizziness: 64.8%

(l) Chest pain: 80%

(m) Pigmentation: 87.5%

(n) Break through bleeding: 81.9%

II. In 1972, a study was done by Mullick B. and Seal S.C. in "Latest Contraceptive Techniques in Family Welfare Services"[24] was done in 3 clinics of Family Welfare Planning Project of the Humanity Association, Howrah and India Fertility Research Programme, Calcutta, through pilot studies.

A follow up study was undertaken of a population of 10,000 in urban, slum and rural areas.

The socio-demographic features were that women married in the age group of 15-45 years with regular menstruation were involved. The study period covered November 1968 - September 1972 with total of 2,533 women who were illiterate and hailing from the lower socio-economic strata.

Immediate complications were incomplete abortion, excessive bleeding and fever while infection, vomiting and diarrhoea were complications which occurred later. Though there are no statistics available regarding this, but still it can be said that the side effects mentioned have been reported to the in take of the pills.

III. There is one study done by the ICMR on clinical Trials in Net-EN.[25,26] In 1981-82, in the initial pilot study by the ICMR had enrolled 2,602 women for experimentation. In 1983, in Phase - III of the Clinical Trial, 1,553 subjects for taken for study.

In 1984, in Phase IV of the Trial a total of 2,250 women were included for experimentation with Net-EN.

The study was started through 45 PHCs attached to 15 medical colleges in different parts of India.

The women who had been included for the trials were illeterate and from the most deprived, sections of the society. Women seeking abortions had also been included in the study. There is no epidemiological data available regarding the age, parity or any follow-up study of these women after the trials.

Ever since 1983, after the first ICMR press release on Net-EN, many womens' groups for example, 'Saheli' in Delhi tried to get hold of information after the trials but have been denied access to relevant documents.

However, the common side effects as a result of the NET-EN, is the menstrual irregularity which occurs in several forms: unpredictable bleeding, spotting, frequent and heavy bleeding and sometimes absence of bleeding. The other side effects mentioned are: disruption of the structure and functions of the natural female hormone progesterone, foetal abnormalities in case the women is pregnant; yet another complication is that the drug passes through mother's milk which is hazardous for the foetus.

Long term diseases like cancer in the breast have been indicated, though no statistics have given.

IV. In 1974-77, an study had been done in Bangladesh[27] regarding the use of D.M.P.A. (Deport Medroxy Progesterone Acetate) on 2000 married women in the age group of 16-45 years. This study was conducted by Gonoshasthaya Kendra, a rural community health and development project.

Though this is not a study done in India, but it has been included in this dissertation because basically the nature of socio-economic conditions in Bangladesh is no different from that of India.[28] Socio-economic and health problems of women are almost the same in the two countries because basically both are third world nations, where women are used as guinea pigs for clinical trials of such drugs like D.M.P.A., which are banned in the advanced countries of the world.

The socio-demographic characteristics of the women reveal that the maximum number of women were in the age group of 36 years with eight or more children.

A follow-up study of 1,601 women was done in 1977 which revealed that 203 women had menstrual irregularities and 89 had amenorrhoea and 47 of them had lower abdominal pain, body ache, weakness basides other minor complaints.

Out of the total, 1020 acceptors were breast feeding at the time of their first injection. 147 reported decrease in lactation soon after the first dosage of D.M.P.A. There were at least 704 drop-outs in this study due to various complications arising out of different dosage of D.M.P.A.

However, it has also been mentioned in the study that in the US, the Food and Drug Administration has withheld approval of D.M.P.A. as a Contraception because the drug has produced malignant breast nodules in beagles. In addition there have been suggestions that long term use of D.M.P.A. may predispose to cervical carcinoma. The above study stated no report of cancer.

II. There is a short report on an experimental study done in India on the use of D.M.P.A. Though this follow up study has a meagre sample of only 24 women who stopped taking D.M.P.A. and generalisation can be made, but still the point of issue there is to throw light on the ill-effects of the study on the health of women.

This study was done at a private clinic at Deenabhandhupuram in Tamil Nadu in 1979 as a part of Family Planning Services.

In May 1979, there were 485 acceptors and 210 continuing users. Over 2000 doses had been given. 150 m.g. of D.M.P.A. was administered 3 monthly and 450 mg of D.M.P.A. was given 6 monthly.

Though no socio-demographic features are reported in this study, yet this brings out certain complications like intermittent bleeding and spotting. However no data is available on the nature of bleeding. The social implications of persistent bleeding will be discussed later.

The author Dr. Mrs. Hari M.John defends the use of D.M.P.A despite the complications saying that the advantage of this type of contraceptive is that it can be used without the knowledge of their husbands.

Another skeptical manner in which the doctor concludes her study is that the experiment reports a "preponderance of male babies being born to women who have been on Depo - Provera without any dosage of Estrogen to stop bleeding". This, according to her is in correspondence with the parents' desire to have a'balanced family' in terms of sex and observes candidly that 'sex-selection' makes a significant contribution to control the population.

However, such callous studies raise various social issues which will be discussed later in detail. But still it cannot be denied that these studies ultimately indicate the negative impacts on health of women and also raise questions regarding their social implications.

CONCLUSION: From the above impact studies on contraceptives, we find that despite the fact that their methodology in not proper, studies are mostly clinic-based and sample size are not adequate which tend to create methodological problems, but still it can be said with some confidence that firstly, most of the studies find high rate of complications and secondly, the range of complications is very wide.

The immediate complications visualised are:

(a) wound infection
(b) pyrexia (fever)
(c) pain in the lower abdomen
(d) urinary infection
(e) thrombo flebitis
(f) backache

Other late complications are:

(a) intense weight gain
(b) incisional hernia and
(c) menstrual disorders

Ectopic pregnancy is a common adverse effect of sterilization bacause of formation of a fistula (opening) in the layers of the tubes.

These have long term social implications for the women which we are going to deal with in detail in the next Chapter.

CHAPTER - III

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CHAPTER - IV

SOCIAL IMPLICTIONS OF REPRODUCTIVE TECHNOLOGIES

(I) BRIEF PERSPECTIVE OF HEALTH STATUS OF INDIAN WOMEN.

(II) SOCIAL FORCES PERPETUATING GROWTH OF REPRODUCTIVE TECHNOLOGIES

(III) CONCLUSION

(IV) CONCLUSION

(V) REFERENCES

From all the evidences gathered so far, we are now in a position to analyse some of the social implications of reproductive technologies. The social consequences are a result of certain existing social forces that direct the growth of these technologies not only to suit the demands of the ruling elites but also establish social control on the reproductive rights of women.

Women, considered to be the 'weaker' sex in the society are already suppressed to a lower social position. This is the result of the well knit socio-economic, political and cultural institutions (as analysed in Chapter II), which enact to impose control on women. These social forces have undermined the immense contributions of women in social reproduction of labour power. On the contrary, they have over-emphasized the biological role of women in reproduction.

As the history of evolution of reproductive technologies (in Chapter III) has shown the concept that women are "bearers" of children led to innumerous scientific intrusions deliberately imposed to test this biological function of the female reproductive system. At the earliest, it was abortion, then the entire development of contraceptive technology and now the new interventions in the reproductive process by laboratory and test-tube fertilization (In Vitro Fertilization).

In this context, it is important to analyse whether the use of these technologies have been actually meant for the benefit of women as professed by the medical scientists.

As we are discussing in the Indian Social Context, it is worth while understanding the existing health stat us of women in India.

If we look at the differential mortality rates for the year 1983,[1] it provides some interesting insights:

a) though the reproductive age-group extends from 15 to 45 years, the mortality between males and female is different only in the age group of 15 to 29 years. In this group women have higher death rate.

b) the major crunch of mortality falls on the younger age-group and we see that in the age group of 0-4 years, the mortality is much higher as compared to male.

c) In the older age-groups, female mortality was either equal to or lower.

This pattern of mortality is also reflected in the life-expectancy figures. This life-expectancy of females is lower right from the time of birth until the age of 40 years, which is 55.40 in females and 55.60 in males in 1981-86.

Maternal mortality cannot obviously be the cause of this since reproductive risks do not explain the lower life expectancy of females below the age of 15 yrs.

This is revealing because we see that there is no logic of excessive emphasis of reproductive technologies in the name of saving women from the miseries of obstetrical problems.

Maternal mortality rate accounts for only 11% of the total deaths in females. Even here the main causes of death as revealed by Model Registration Data (1983)[1.2] are severe bleeding, anaemias and puerperal infections.

If we examine the nature of reproductive technologies, we feel that their growth is not related to these epidemiological priorities.

These reproductive technologies are essentially concerned with contraception and conception. It is also important to note that the technological needs of problems which are the major killers of female children as well as young and old women do not get the attention that they need. For example, diarrhoea, pheunmonia, tuberculosis continue to prevail as major killers.

In India, the sex ratio has been declining from 1901 which was 972, and in 1991 it is 929.[2]

In any society, under normal circumstances, men and women are exposed to mortality risks equally and in addition, women continue to face the risks associated with reproduction.

However, in India, we find a gradual decline. "The sex composition of India's population not only shows a shortage of females per 1000 males, but this shortage has aggravated over time except in 1981 when the sex ratio was 934.3.

The present five point decline between 1981 and 1991 is being viewed with serious concern by demographers and several women's organisations.

There questions arise in respect of the observed trend:[3] (1) Have the living conditions of females, particularly the access to medical facilities deteriorated during the 1930s to 1970s? (2) Has the sex ratio at birth become more favourable to males in recent years? (3) Has there been greater undernumeration of females in the 1991 Census as compared to the 1981 Census?

Four possible reasons have been attributed to the decline in the sex-ratio over time: (1) higher emigration of females than of males and/or larger immigration of males; (2) the sex-ratio at birth is becoming more

favourable to males than what it was in the past; (3) female mortality has been higher that the male mortality in India and this differential has increased instead of narrowing down; and (4) there has been greater undercount of female in the current census than the previous one.

The author[4] has analysed these four points in details, and for our purpose, the two critical points he is making are:

a) In the Indian context, the biological superiority of female becomes less critical in lowering infant mortality among female babies because of extreme neglect that they suffer. Thus, he argues that the overall sex-ratio may not necessarily be in favour of females.

b) Secondly, he has pointed out that in the absence of any hand data on sex-ratio, at birth in India, it has been assumed that there are 105 male births for every female births for the past 40 years.

This, he points out may not be valid, especially, given the new conditions in which female foeticide after amniocentesis has become an acceptable source of female infanticide in a large number of cities.

From the above evidences, therefore, it can be inferred that women's ill-health is not considered of much consequence by the society.

"The disastrous experience with the IUCD, followed by sterilization techniques and other dangerous experimentation with injectable contraceptives have all revealed that the Family Planning Programme has added further to the morbidity load carried by the female population in India"[5].

The question then arises as to what is the need for all these technologies? This leads us to examine certain social forces which are responsible for such misuse of technology on women.

While tracing the history of the reproductive technologies certain social forces could be identified.

(a) Class Conflicts:

In an attempt to dig out the social roots of reproductivetechnologies, Class Conflicts, if we (in chapter I) recall in the beginning when the "masses" were created out of the smaller communities dependent on agriculture. We can conclude that with the industrialisation and urbanisation, the life and culture of the agricultural labourer underwent tremendous changes. "He could form no concept of 'good' life or 'better' life, because

his entire time was spent for securing the bare necessities for survival.

While the economy was actually exploding and contracting in a highly 'volatile' manner, its character was perceived as one of continuous expansion (like empire building)."[6]

"The commercial and professional classes were hit hard by the rising inflation on the huge families built by the then enterpreneurs. Their descendants came to resent the expenses involved in the management of huge households. They wanted to reduce the family-size.

The middle class families, unable to keep up to the satisfaction of their basic needs, their numbers began to diminish. The contraceiving couples saw it as common-sense health care and exercise of social responsibility."[7]

With the advent of the industrialisation, women from the poorer section had to go to factories to work from down to dusk. They had to leave behind their children totally uncared for. Hence, they feel the need for limiting their families.

Meanwhile, as we saw in the origin of the contraceptive technologies (Chapter IV), the birth-control propaganda advocated the use of artificial birth-control methods,

with an aim to curb the birth-rate of the poor people of the society because the Family Planning Programme which was based on the Neo-Malthusian ideology that in a "situation of poverty and increasing population, the increase in amount of resources too will be necessary to maintain the population."[8]

Therefore it was assumed that by decreasing the population growth, the resources otherwise consumed, will be released for productive investment. It was therefore affirmed that the population in growth is a hurdle to socio-economic development; therefore the need for family planning.

The rise of the Malthusian ideology of the population control put forward the ideas that the "procreation of the rich and the diminution of the poor was the only means of eliminating misery and absolute poverty".[9]

Along with this the Eugenists aimed at curbing the birth rate of the poor through the "artificial" methods of birth control. They also propagated the idea that "the only really effective means of improving the position of the workers lies in their restricing their numbers as the "poor, improvident, mentally and physically inferior" types of people flood the society with weakly and defective offsprings".[10]

The threat of population explosion wa therefore used not only to maintain the interests of the privileged classes but also to the perpetuation of a system of social and economic exploitation through an unending chain of misery, degradation and deprivation for the poor sections of the society. "At the root of India's population problem is not copulation but an alliance of middle and upper class interests opposed to radical social, economic and political change".[11]

In this context, it may be said that while the women from the poor nations were made scape-goats of the invasive methods of contraceptions, the women in the West are 'invaded' with a whole range of anti-infertility techniques and other conceptive technologies in reproduction to "increase the number of the white race on the earth". They are constantly plied with inducements to raise large families.[12]

It is relevant to note here that there was no easy availability of barrier methods of contraception even to middle and upp er class women.

The Family Planning Programme has made women the target of manipulations in researches of different contraceptive technologies. Women alone are condemned to accept the full responsibility for contraception.

One the one hand, while there are only two simple methods of contraceptives (vasectomy and condoms) for the males, there exists on the other, an innumerable invasive methods for women. The simple explanation given by the ruling classes is "any method will do, along as women's reproduction is controlled".[13]

"In fact in 1975, the World Conference of the International Women's Year declared that it is the right of women to decide freely and responsibly on the means and spacing of children and to have access to the information and means to enable them to exercise that right".[14]

"Both the objectives could be achieved if women had access to accurate information regarding contraceptive methods and had necessary freedom to make the choices."[15]

The accurate information refers to the knowledge for the risks involved in using the contraceptives. "A yawning gap exists between ICMR's professed norms declared by ICMR's Ethical Committee For Clinical Experimentation and what happens in reality during the trials."[16]

"A shroud of secrecy prevails ever since 1983, after the first ICMR press release on Net-EN. The intensive research on various female methods of contraception are carried out without the informed consent of women".[17]

These researches generally make it believe that "contraceptives reduce maternal mortality and statements like" it is much safer to take the pill than to become pregnant are made to highlight what a boon the modern day contraceptives are to the procreating women. Even when efforts are made to discuss complications or mortality rates in relation to contraceptive methods, they are rationalised as "contraceptives" has no life threatening side effects and therefore it is safe. In reality the quantum of the morbidity produced by these contraceptives as seen in the above studies in Chapter III is far too high to justify the wide use in developing countries, like India, where the very factors responsible for the high maternal mortality rate would lead to an increase in mortality due to contraceptive use as well."[18]

"The incidence rates of complications (mentioned in the health impact studies in Chapter III) are probably an underestimation of the actual incidence in the rural areas. The calculations have not taken in account

the total morbidity subsequent to contraceptive failure. It should be noted that the complication rates for tubectomies are from surgeries performed in teaching hospitals. The incidence rates in the field situation, i.e. PHCs and FP camps would probably be much higher than the ones quoted.

The morbidity due to oral pill has not been indicated as the acceptance and the continuation rate for oral pill use in India has generally been very low. In fact it is so low that oral pill use rate is not included in the assessment of eligible couple protection rate."[19]

"Lack of epidemiological data of the use of contraceptives in population studies on women, therefore do not give the quantum of the problem. Anyone with even a rudimentary knowledge of the machanism of action of these methods would know that the complications arising out of their wide-use will be of a magnitude never witnessed before in contraceptive history. An added problem is that these risks will not be confined to women alone but are going to be extended to their progeny as well.

It has also been analysed that the lowest observed failure rates for the currently available methods, the effective is almost similar, e.g. for tubal sterilisation

lowest observed failure rate is 0.4%, pills is 0.5% and IUD is 1.5% condom is 2% cervical cap is 2%.

That means theoretically the 'effectiveness' of invasive contraceptives in a well 'controlled' situation is hardly the same as non-invastive barrier methods. The problem comes into actual use when in a group it is difficult to 'control' the performance of a method in a population because not every member may be regular with the intake of pills. It is stated that more and more 'invasive' a method is better and better is its effectiveness because it will act a to so many levels that conception will not stand a chance."[20] However, the very fact that they act at multiple sites in the body adds more to the already existing health problems.

Thequestion arises then : is pregnancy really such an enormous risk that the wide use of hazardous contraceptives cannot only be justified but should in fact be promoted in the interests of women? A large number of women are at a risk of death from contraception related causes and this population would have already faced the risks of becoming pregnant before they accept a method.

Finally, the complications arising out of contraceptive use are generally long-term effects and could lead to permanent disability."[21]

The experience of pain in the pelvic area and the back region tremendously affects the work capacity of women. Work in agriculture and household activities require bending and stretching which are aggravate further the pain and bleeding.[22]

In India, menstruation has been associated with the impurity of women and the myth, is deep-rooted that the impure woman cannot touch the standing crops because then they get ruined.[23] Women have to perforce remain absent from work in agriculture which affects their wages which is already low. The problem of irregular bleeding as a result of conraceptive use creates further problems and the woman has to remain absent for more number of days.

"There is paucity of information regarding any metabolic disorders or ho rmonal changes related to prolonged amenorrhoea as a result of injectable contra-ceptives (DMPA, as shown in the study in Chapter III), though no generalisations can be made in the absence reliable data.

The absence of bleeding for prolonged periods is 'treated' by the administration of additional drugs.

The family planning programme thus adds further morbidity to the already unhealthy female population of India.

A good example of the class - conflicts (in India) which gave impetus to the growth of female methods of contraceptives is the 'political upsurge' of the masses against the ruling classes as an aftermath of the mass vasectomy camps during the Emergency, which resulted in overthrow of the government.

As a result of the mammoth operation of 'targetism' in Family Planning Programme and Family Welfare Programm (as only the name changed, though the concept remained the same), the MCH Programme receded in the background and taken out of general health services.

The medical professions' preoccupation with the reproductive function of women has led to the inclusion of Family Planning Programme as a part of MCH Services. And an empirical achievement was towards achievement of demographic and statistical goal.

Secondly, we find that class - conflicts (as in the emergency period in 1977, in India) were instrumental in making women the victims of 'sophisticated' technological interventions which have had not only disastrous impact on their health but also made women the victims of social control.

(b) Maintenance of Status Quo of Patriarical Structures:

"Fairly early during the development of population control ideology, there had been speculation on how the pre-existing culture of sex-preference of children could be made to serve the goal of curbing the birth rate. The rationale was that people all over the world, in both developing and the developed countries have a preference for sons. This preference influences family size or decisions of accept sterilizations."[24]

Therefore, it was planned that if it could be made possible for couples to have babies of the desired sex, they would be more likely to limit the number of their children. This led to the use of sex-determination and sex-preselection techniques as a part of the Family Planning Programme in India (through Amniocentesis) in order to abort female foetuses.

Abortion occurring out of economic necessity (due to poverty situations) or social compulsions as related to neglect of the girls child strengthens the issue of gender discrimination.

A very good example of oppressive social role of technology is the use of Amniocentesis for abortion of female babies. Amniocentesis perpetuates patriarchy. "This test had become so popular that between 1978

and 1983 around 78000 female foetuses were aborted after sex determination tests. Since one of the factors which determine the family size is the need to have at least one surviving male child, this test is being promoted as a method of population control."[25]

Now if we co-relate our analysis of declining sex-ratio, misuse of this medical technology can be one of the reason for this demographic trend.

"Economists relate this to the law of demand and supply and infer that scarcity of women will raise their status and value in the society."[26]

"However, in a society which treats women as "sex objects" will not treat them in a 'humane' way if they are scarce in supply. This in turn tends to increase social problems like rape, abduction and forced polyandry."[27]

"Yet the logic to think that it is better to kill female foetuses than to give birth to unwanted females is very fatalistic. It appears as if the same logic if applied to the poor would imply that it is better to kill the poor than let them suffer from poverty and deprivation."[28]

"The concept of 'balanced' family in this connection seems quite absurd because the question arises as to how many times can a women have abortion without

jeopardising her health for the want of a male child.

Women in reality are socially conditioned to accept that unless they produce one or more male child they have no social worth."[29]

"The patriarchal status quo in the society is further maintained by imposing control on the freedom of women's fundamental rights and decision-making power. In a society where women are basically taught to subordinate their interests to those of men, women cannot have the freedom to choose freely."[30]

"In India, women have very little decision-making power. The powerlessness women experience in their lives also prevents them from making reproductive decisions. They are not in a position to decide either the number of children that they would like to have nor the intervals at which they would like to have them. Further, social customs demand that a women should conceive in the first year of marriage itself and produce at least one surviving male child. These restrict a woman to choose contraceptive methods. She is able to exercise some measure of control only after the decision to limit family size has already been made by. For instance, even though IUCD was promoted as a temporary method for spacing, Indian women used it as a permanent method

to limit family size.[31] The only other way by which women exercise some control over their reproductive function is by undergoing abortions.

The crucial questions yet shrouded in the controversies that remain unanswered one:
"Should the scientists be developing methods that are easier, faster and more convenient for those whose main interest is to control the swelling numbers of the Third World?
Or should they be developing new techniques that are safe and involve women in controlling their own fertility?

Ironically, women seeking abortion are sometimes compelled to accept contraception in any form (left to their 'choice') as a precondition to MTP. In a sample survey done by Women's Centre in Bombay in 1982 revealed that out of 8000 abortions carried out following pre-natal sex determination, 7999 were of female foetuses.

Yet another implication of such sex-choice technologies is that to choose the sex of one's children is most absurd "because the most basic judgement about the worth of a human being is made to rest solely on sex."[32]

"Sex selection implies equating biological sex with social gender role. Sex-selection is therefore, a perpetuation of the ideology of sex-role determinant totally ruling out the inter-changeability of roles and the fact that biology need not be a determinant of social roles."[33]

"The skeptical approach of the medical experts focussing attention on the 'genes mutation' at a time when environmental hazards are on the increase is another example of the pretext for the misuse of sex-selection techniques in detecting females. This is another way of exploiting and establishing social control on women."[34]

(c) Professionalisation in Medicine:

Specialization in the field of gynaecology and obstetrics not only laid control on women's reproductive system but also on every aspect of women's lives.

This professional and social control over women led to medicalisation of not only pregnancy and child birth but also infertility became their domain of experimentation.

The growing use of technology today represented by the widending reliance on amniocentesis and the sonogram was part of the fuctions and mystification of the functions and the role of the dai in the community.

Towards the end of the 19th century, there was an extension of British medical activity in India.

"Thus, medical science made a siege to the most guarded of the Indian sanctums - the family".[35] All these had a great impact on the social control over women as the active management of maternity and child bearing in hospitals led to the assumptioning the professionals in medium of an area that had been total preserve of women.

In India medicalisation of pregnancy and child birth be-gan with women doctors who were a "break-away', from official organisations organised themselves together and made a "less condemnation of indigenous ways and their writings reflect attempts to understand and empathise with the women they worked among".[36]

The Dai represents the older social order and with modernisation which women's work was destined to be obsolete.

The social origin of the Dai (from the low class) and a general belief in the unsanitary nature of Indian habits laid foundations in the perception that those performing 'low' occupations would be unclean. They were considered not even worth for training. They were also blamed for 'accidents in labour' i.e. malpresentations and delayed labour leading to fatal consequences. The fact is that there is no data to show that the work of dias is not any way inferior.

The principal causes of maternal deaths in pregnancy and labour, ecoampsia, sepsis and haemorrhage were brought under control by the use of technology (an early example being forceps). This became an 'eye opener' for the Indian medical scientists.

The marginalisation of the dai, therefore, implied that "one more world was lost to women, the state assented its writ to control for the first time in Indian history the most intimate and central funtions of women. Hospital played a dominant role. A new culture of discipline and inhibition was sought to be imposed on the mother and child with the rise of the clinical birth. New ideals were sanitised

the strictly functional relationship between mother and child were to be enforced in place of the warm tactile intimacy and close bouding that is so central to Indian child bearing".

There are yet other social implications regarding the process of child-birth today in the context of hospital confinements.

Robbie E. Davis - Floyd lucidly brings it out in the following :

"soon after her entry in the labour room in the hospital, the woman is stripped off symbolically of her individuality, her autonomy and her sexuality as she now becomes marked as 'institutional property'. Multi-step procedures are carried on her as she is cleaned and made to wear hospital clothes. This signifies the total dependency on the institutions for her life, telling her not that she gives life, but rather that the 'institution does'".

The labouring woman's cervix is checked from time to time for degree of dilation. If dilation is not progressing, pitocin (a synthetic hormone) is administered to speed her labour process. This labour augmentation clearly indicates to the woman

that her body machine is defective as it is not producing on schedule, in conformity with production time-tables (labour-time charts).

The message that her body-machine which produces the baby is quite a different entity from her individual self is intensified by the external foetal monitor, attached to her body, by a large belt around her waist to monitor the strength of her contractions and the baby's heart beat.

The vision of the needle travelling across the paper, making zig-zags with each heart beat, often gives the illusion that the machines are keeping the baby's heart beating. As the moment birth approaches, there is an intensification of actions performed on the woman, as she is transferred to the delivery room, placed in lithotomy position. This position in which the woman lies with her legs elevated in the stirrups on the table, completes the process of her symbolic inversion from autonomy and privacy (of home confinements) to dependence and complete exposure, expressing and reinforcing her powerlessness and the power of society at the supreme moment of her own individual tranformation.

The sterile sheets in which the baby is draped per force creates a psychological delineation illustrating to the woman that her baby, society's product is pure and clean and must be protected from her fundamental uncleanness of her body and sexuality.

Of equal significance, the episiotomy transforms even the most natural of child births into a surgical procedure; routinising it has proven to be an effective means of justifying the medicalisation of birth.

The obstetrician instructs the woman on how to push, catching the baby and annomicing its sex and then carries out tests to assess the 'normality' of the baby's bodily functions (APGAR SCORE). Meanwhile, mechanicity of woman's labour process is further carried on by tracting the placenta and then failing to come out on its own, more of drugs (pitocin) are induced in order to 'help' the uterus to contract. Then again as if on a lifeless object, without taking into consideration the intense pain the woman is undergoing the 'sewing' up of the episiotomy starts. If the woman happens to utter a cry of agony, she is humiliated, scolded and asked to remain in position so as to enable the doctors to carry on with the stitching procedures on her flesh at ease.

After the completion of all this the woman who has just given birth, to a new life is dubbed as the 'new mother' through the technological annointing.

Through these procedures, the natural process of birth is divided into various segments and then transformed as a 'mechanical process' by the use of 'medical technology'.

Day by day basic pattern of high technological intervention is being consistently increasing. Now most hospitals also require at least

(a) periodic mobitoring of all pregnant and labouring women;

(b) analgesics, pitocin and epidurals are widely administered

(c) delivery by caesarean section where the 'cases' are often made to appear to be either 'complicated' or situation out of control during the labour process."[37] This is highly practised in private nursing homes where money is extracted as fees from families hailing from the middle and the upper classes. The women from the poor classes are denied or rather deprived of the 'facilities' of modern obstetrical care.

She is left at the hands of the traditional dais or left to die in cases of obstructed and difficult labour in the home.

The point to be raised here is that woman, in this sphere too, irrespective of caste, class and creed is left to suffer during pregnancy, during labour and in the post-partum stage.

This is the price women have to pay when medicalis ation of pregnancy and birth takes place as technology dominates the natural event of life. This indicates a powerful significance of the woman's dependence on science and technology during her 'rite' of passage into motherhood as a means of social control on her 'rights' in reproduction.[37]

Professional and Social Control on Infertility:

It is true that infertility in the Indian social context means social victimisation of women.

"Obviously it is important to understand in this context that "among the poor people, a large family is an asset and an expression of wealth and social status: each new child is not only one worth to feed but soon also two hands, useful for the

subsistence of the family. Barrenness bears a social sti ma to the infertile woman.

As a family health problem, threatening family survival, childlessness is a neglected family planning ingredient."[38]

Family Planning effort in India has throughout been to deal with women. Who are "targets" of birth control. Hence there are no studies, no epidemiological data regarding the principal causes of infertility: injections pelic diseases, sexually transmitted diseases, infections after child birth and abortion and tuberculosis.

Pelvic inflammatory diseases attributed to IUD users also cause infertility.

Another problems associated with this is that the ANMS who are at the grassroot level fail to identify such diseases and help women in conception later. This is because they are preoccupied with the fulfilment of Family Planning quotas to achieve 'targets' in FPP.

There are three isssues involved:

( ) Instead of finding solutions to deal with the causes for diseases associated with infertility, the medical

establishment is enthusiastically developing technologies as gifts of science for women to deal with infertility- thus the growth of techniques like In Vitro Fertilisation and artificialy Insemination etc.

(ii) Secondly, in the socio-economc context and social inequality, there are overwhelming masses of poor, destitute children but no action is initiated to motivate in fertile couples to 'adopt' children.

(iii) Finally, instead of dealing with the above issues, unnecessary expenses are incurred for the trials and experiments with technologies whose efficacy and safety is not even proved.

Hence, to view infertility as 'illness' itself is a denial to deal with social and health problems associated with it.

With rise of technological innovations the knowledge of medicine became more and more professional- ised. This not only led to the medicalisation of women's lines but also, laid the foundation for domination and control by the professionals in medicine in every sphere in general too.

When a person falls sick it is the doctor who decides what his illness is; the 'diagnosis' of his illness and labels him as a patient and is put on a 'treatment' regime 'ordered' by the physician.

Thus, the decision-making power falls in the hands of the doctor who is supposed to have professional knowledge and 'competence' of skills to 'cure illness' and thus direct control of people's lives.

The women being 'docile' and the 'suppressed' lot have been the target of most technological manipulations and mischievous play of professional domination and social control of vested interests: sometimes to control their fertility and yet at other times to use women to increases their number for eugenic control.

(d) Market and Profit Making:

The various contraceptives have been widely produced. The Revised Strategy for National Family Welfare Programme itself explained its plans to

expand the sale of oral pills through cadre of health workers called 'Village level women volunteers Corp from door to door.

In 1983, Indo-US Bilateral project was signed and 10 million US Dollars have been allotted for the communications and marketing projects.

The drug manufacturers in India, continue to market the drugs which have been actually banned in the West, for example, the Oestroden progesterone

(EP Drugs) combination of hormonal preparations used for pregnancy test, althrough it has been stated that HDCEP (high dose combination of Oestrogen and Progesterone) "has no necessary role in the management of any gyaenoclocal disorders like secondary emenorrhoes, dys-functional uterine bleeding, endometriosis, oligomenorrhoea".

Secondly, HDCEP is stated to be unreliable as a pregnancy test (as stated by a group of health activists of medico friend).

Medical practioners in collaboration with the drug manufacturers are making a roaring business in conducting pregnancy tests.

The ELISA Test marketed by hidustan Antibiotics as Nancykit, is highly sensitive and cheapest (less than Rs. 7/- per test).

Various other urine tests like, gravindex test is done at cheaper rates than HDCP which costs Rs. 8.50 to Rs. 9.50 per test.

HDCEP is widely and freely marketed with the "mistaken belief that it is an abortificient in India", in the name of EP Forte tablets even after the issue of a banned order by the Drugs Controller and Comestic Act in 1982 on advice by the ICMR.[39]

The roaring business, the private practitioners are making in conducting ameniocentesis has no accountability.

"A survey done by the Women's Centre in Bombay in 1983 revealed that 'Pearl Centre' and Merkishandas Hospital conduct these tests ranging from Rs. 80 to 500 per test to about a female foetus. This way they earn lakhs at the cost of women. It is reported that the establishment defends that 'the potential cost of bringing up a daughter and spending on dowry is much higher than the cost of these tests."[40]

These vested interests therefore, act as social forces to control the professional knowledge by not giving sufficient information regarding the use of hazardous drug. They take advantage of the lack of knowledge of the general medical practitioners who do not have 'continuing' education to keep up their knowledge and practice upto date. These forces also help to perpetuate a pre-existing culture of son-preference and make a thriving business by way of 'helping' couples for son-determination and sex pre-selection and ultimate abortion of female foetuses.

Finally, the entire focus of the Family Planning Programme in the name of 'Foreign Aid' has been an enormous use of national resources to promote the commercial interest of the US Medical Industrial Complexes.

(e) Domination of Neo-Colonialism of the Third World:

A very critical aspect of social implication of reproductive technologies lies in the areas of international relations between the first and the third world. Although the developed western countries have not only used people as guinea pigs for export and transfer of obsolete technology, but they have also tried to capture their markets. In addition, they have influenced the governments of these countries to adopt policies and programmes which would ultimately benefit the transfer and sale of western technology. A good example of this is the development of Demography and the burgeouing growth of the Family Planning technologies to control the 'rising numbers'.

"Family Planning is being fostered by "imperialists United States Agencies" in place of social and economic aid. Six organisations, mainly have been responsible for the family planning services in India and other third world nations. They are the Population Council, the Ford Foundation, the Rockfeller Foundation and Rockfeller Brothers Fund, the population crisis committee, the international planned parenthood, IPPF), US Agency For International Development (AID).

No other nation as India has received so much funds for Family Planning. There have been many new programme intesnive schemes, incentive schemes, Extension Schemes, Post-partum programmes, programmes for 'target-oriented and time-bound' and 'crash programme; many new techniques of great initial promise came up. Kippes Loop, redesigned loops, vasectomy, tubal ligation, and legalised abortion. Yet India's birth rate remains almost unchanged.

"The obsession of the experts with techniques for contraception soon costs from family planning sectors more money. The technological fix for the population growth follows the standard formula of modern industrial marketing.

First there is more research and development in 'invasive' improved techniques. Then distribution of the products is made and later more effective information and education through improved communications are done to created demands and market for the products. Finally, more funds are given as "aid" for rotation of this viscious cycle.

"Faith in the power of technology to control fertility" as a disease to control poverty in the third world with the help of contracpetive technology

given as 'aid by the Westerners tends to create a 'political impetense' in these (third world) countries to deal with the "more genuine and more intense concern for the poor - particularly in terms of land reforms, education, creation of employment opportunity, social equality, health services and water supply.

Thus, the most reproductive technologies are being used for the commercialisation of human reproduction at the cost of women who do not need a technical answer to their social problems as propagated by the West."[41]

SUMMARY AND CONCLUSION

From all the evidences so far we conclude that the health status of the women have been related to their low social status.

Unless their role in the society is understood that recognised and given a better social status in the family and society, thereby pushing family planning technologies or any other reproductive technologies as an universal panacea will be meaningless.

'Raising the health status of the women had not been the central aim of the innovators of these reproductive technologies.

Medical profession gives little importance to both the economic as well as the social factors which determine the health status of women. Merely by focussing on the reproductive function, the medical profession neglects the far more important causes of morbidity and mortality among the female population in India. Both these factors put together encompass the use of women and their reproductive function as instruments for their social control and domination

Thus, wefind the reproductive technologies have been a matrix of network between state legislation, medical ethics, business interests and international scientific developments and other social forces mentioned earlier in this Chapter which act as a powerful means of social control of not only women, but also the ex-colonial domination emerging as biological and genetic answers to social, political and economic issues of third world nations by the West.

CHAPTER - IV

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CHAPTER - V

SUMMARY AND CONCLUSIONS

From the review of the studies done so far, we derive certain conclusions which may be summarised below.

In an effort to trace out the implication which reproductive technologies bear on women, we needed to essentially first examine the concept of technology as such, and what effect is produces when it is introduced in a social system without adequate assessment of the social needs of the majority.

Technology per se is not bad in itself. But has been a "double-edged sword" especially, because in this society, the controllers of technology and the ultimate users of it are totally different sets of people, with different interests and concerns. Most technological developments which are introduced, are with the aim of maximising profits.

The introduction of technology has thus negatively affected people involved in production, especially women workers.

Though machines are introduced in the beedi industry, in the chican work activity, in weaving, in mines, and various other industries and occupations, the plight of the women workers is pathetic as already

mentioned in chapter II .

The introduction of technology has resulted in the displacement and retrenchment of women workers, many women are forced to do more strenuous work.

On the other hand, work which is strenuous and hazardous, due to the primitiveness of the methods and tools is left untouched by technology e.g. harvesting and weeding in agriculture. The use of technology, through mechanisation has not only increased but worsened the health of the women workers.

This gender discrimination is because women are not considered as workers, as analysed in Chapter II. Women are considered physiologically weak, though they perform most of the arduous tasks. In addition, we have been made to believe through the ages that the nature of work women perform, does not utilise much energy; have women need to eatless and earnless wages for the same ammount of work as men.

We can visualise this gender discriminiation not only with regard to agricultural technology but other techologies as well. This gender discrimination is related to the low social status of women. While analysing the work of women, we found that women's work in side the house or women's contribution

to social reproduction of labour power is greatly undermined by the society. This is perpatuated further various social institutions, like family, religion etc., as mentioned in Chapter - II.

If we analyse this deeply we come to the conclusion that womens labour in the house is not only reproductive and social, with regard to the upbringing of the family and caretaking functions which she does out of mere love for her family. This is also productive work as this aspect of womens' work helps to build and set in motion the work force of the society as a whole.

Women are responsible for the entire household work which is socially productive labour. If women stop this work (crucial to the survival of the society) and no one takes it up, then, all factories, transport, construction, food production, and so on will come to a stand still; disease and hunger will spread and lead to a virtual collapse of the entire social organisation.

This immense contribution of women to the social reproduction of labour power need for the on going of the society is devalued and considered as non-work, and therefore remains unpaid.

This gross neglect of recognition of women's social status is reflected on their health-status too.

While we have discussed some of the general effects of technology on women there are even more specific effects of technology on the health of poor women, especially the reproductive technologies. There is growing evidence from our study that women pay the price of ill-health evenwith technologies that are ostensibly health-promoting.

These issues have been dealt with in details in our Chapter II and IV, which provide evidences about their implications on the health and the social situation of women.

Ironically, several reproductive technologies, ostensibly evolved for improving the health of women have created precisely the opposite effect. The best example of this, is in the areas of contrceptive technology.

From the 'Sixtees', women have been the focus of the family planning programme in India, since the one and only attempt at promoting male sterilisation caused a severe backlash. With the growing panic about increase in population, the onus of birth

control has been placed on women, especially from the poor classes.

Thus the contraceptive techniques which are thrust on women, without their knowledge even, bear several implications.

They are technologies which are hazardous either because they produce tremendous side-efects as recorded in the health-impact studies or because they are handled by inexperienced hands, resulting in rupture of the uterus. This has been vividly seen in the mass laparascopy camps conducted under highly unhygienic conditions. These technologies place women further at a greater risk by adding morbidity to her alredy existing ill-health.

This is indeed ironic in the light of the fact that birth control is propagated as an intervention supposed to promote women's health, not endanger it. Repeated pregnancies, coupled with inadequate nutrition and increasing work burdens, form a viscious cycle which drains and debilitates them. This, coupled with national concern over the so-called population explosion (though no one notices either women's hunger or overwork) has led to contraceptive technologies being positioned as a virtual preventive health measure for women.

It is paradoxical that the excessive bleeding, cramps, backache, nausea, dizziness reported by thousands of women who have undergone IUD inscrtion, laparascopic sterilisations, and most of all injectable contraceptives like Net-EN and Depo-provera, are dismissed as minor problems or exagerrations.

This callous attitude is attributed to the fact that majority of these women in India are poor labourers, uneducated and oppressed lot, bearing a low social status.

The oppressive role the reproductive technologies has had negative social implications on women from all classes.

While birth control and the small family norm are being promoted, on the one side, another supposed 'high-tech' health technology, viz, amniocentesis, is actively working in opposite direction. This technology, originally developed to detect foetal abnormalities, and save women from bearing deformed babies, has become a tool for sex determination and sex pre-selection in our society, which accords women such low social status.

Preying on the socially-enforced desperation for male child the amniocentesis-cum-abortion clinics also perform abortions on women at advanced stages of pregnancy often with fatal consequences.

Therefore, the whole question of technology and women's health has been then examined with regard to the social forces perpetuating further the growth of these technologies and thus imposing social control on women by making them the targets of all technological manipulations as analysis in Chapter IV.

Thus, on the whole, an attempt has been made to highlight three main aspects in relation to social implication of reproductive and other technologies in general, particularly on women: Firstly, there are technologies which have been developed, but have not reached the majority of women. e.g. the smokeless chula. in the villages of India. Secondly, there technologies developed for facilitating women's work, but have not reach because low priority in research e.g. in small scale industry. The fact that little or nothing is, in fact, available, in a nation capable of space satellites and nuclear power, speaks eloquently of the low value placed on women's labour and health finally there are technologies developed which are inappropriate or unviable for poor women because they have not been consulted or involved in the planning, development, and testing phases. e.g. the reprodctive technology.

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