

Ecosystem Approach to Household Resource Management Analysis

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INTRODUCTION

The Ecosystem approach to household resource management views household as an "enviored" and takes into consideration its interdependency and interrelationships to biophysical, social, and technological systems with which it interfaces and interacts for its life support system (Deacon & Firebough, 1988; Paolucci, Hall, & Axinn, 1977). It envisages the constraints imposed upon households by both the bio-physical and socio-cultural processes, as dominating the options and final choices faced by the households. The bio-physical, socio-cultural, and technological constraints imposed upon Nepalese households are severe which have resulted in economic stagnation and perpetual server which have resulted in economic stagnation and perpetual poverty.

In Nepal, more than 90% people are living in rural areas and do agriculture. Most of them are engaged in subsistence agriculture. To them, Accessibility in terms of transport and communication is virtually nonexistent. Technological and institutional support systems are very meager. The resources that are readily available for life support system are natural resources and human resources. However, natural resources like forest, water, and land are decreasing in relation to demands of growing population. In the absence of nutrition and health, education and training, and technological support, human resources are underdeveloped and inefficient. In addition to all these, the socio-cultural constraints of low status of women, male out migration, caste system, and inequality in income distribution lead to perpetual under development and poverty in Nepalese households.

NATURAL RESOURCES CONSTRAINT

Most Nepalese households depend on forest, water, and land for their life support system. More than 90% do agriculture and extract energy support such as, fuelwood, fodder, and manure from the forest. However, deforestation is receding the forest areas. The members of the household have to go farther away to collect fuelwood and fodder. They not only spend more time in these activities, but it is equally taxing in terms of human energy expense. Deforestation is also causing drying of aquifer and water sources are getting farther away. Members of the household have to spend many hours just to fetch drinking water.

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The land distribution is skewed. A large portion of population hold extremely small pieces of land (Yadav, 1987). This situation is aggravated by population explosion which is causing further fragmentation of land. Many families have become virtually landless. Too many members toil in a small piece of land wasting their labour inefficiently. In the same manner, they are wasting their labor by cultivating marginal land. Land is losing its soil fertility due to erosion and lack of manure. Deforestation is causing erosion, and fuelwood and fodder scarcity is forcing people to consume crop residue and animal dung leading to reduction of manure of land.

The above mentioned natural resources constraints have deep implications on households' socio-economic behavior. Our socio-cultural norms are that women perform most of the household tasks, When fuelwood and water get scarce it is the women who have to spend more time and energy in collecting fuelwood and fetching water. Women are exhausted due to household maintenance activities. They have no spare time for their own personal care or care of children, let alone the time for recreation, education, or training. Even, their time for agricultural activities is reduced and they tend to grow crops that require less tending. Hence, food production is hampered (Kumar & Hotchkiss, 1988). As fuelwood gets scarce, women tend to save both human energy (effort in collection fuelwood) and natural energy (fuelwood itself) leading to either uncooked food or cooking two or three meals in one sitting. In many instances, they have completely given up cooking high-protein food like legumes which take longer time to be cooked. These practices are detrimental to human health. As women tend to save their time and human energy, they tend to fetch fuelwood and fodder from areas as close as possible. This leads to over extraction of forest resources near to the villages which causes erosion, flash flood, and land slides in and around villages. Consequently, when situation worsens people leave their homestead and out migrate. Their plight after out migration is another story.

INSTITUTION CONSTRAINTS

Institutional support systems for families, such as, social security, old age support, universal free education, free and easy access to health care services, child and elderly day care services, consumption and production credit facilities, free and compulsory pre and post natal care, and other family support systems are non-existent in Nepal. Absence of social security and old age support systems lead households to prefer male children. The family planning and maternal and child health services are sparse and inadequate (UNICEF, 1987). High infant mortality rate leads households to have more children, because they want guaranteed survival of at least a few male issues. This in turn leads to high fertility rate (5.67) (SSNCC, 1986). As education is an expensive business, households send sons to school denying the girls' right for education. The primary school enrollment for girls is 47% as compared to 104% for boys (The gross enrollment ratio for boys exceed 100 percent, because some pupils are younger or older than the country's standard primary school age.) among the primary school age children. This percentage reduces to 11% in secondary level as compared to 35% for boys (World Development Report, 1988). Absentee and dropout rates for girls are more than twice as high as for boys (UNICEF, 1992). They perceive that boys have comparative advantage of getting employment and earning money than girls. Furthermore, boys are expected to look after their aging parents while girls go to their

in-laws, hence investing on girls' education does not yield economic return. The opportunity cost of sending girls to school is also very high. Because, in the absence of child and elderly day care centers, girls have to stay home to care of little children, elderly, and sick members of the household. Girls are also expected to be helping-hands to their over-worked mothers. In the same manner as mentioned above, expenses for medical care for girls is considered not worthwhile. In case of sickness, girls and women get less care than boys and men. It is indicated by high child mortality rate for girls than boys (183/1000 for girls as against 175/1000 for boys) (World Bank, 1992.) All these lead to low quality of human resources in terms of health, education and training for women.

As there is no provision of production and consumption credit facilities, male members out migrate when there is lack of employment opportunity in the village and/or, when there is acute financial problem. Women are left behind to care for little children and do subsistence agriculture. As women are illiterate, they are considered to be unable to deal with financial matters. They are denied of credit facilities, so are unable to own productive capitals. In households where men folks are around, whatever they produce is considered to be the property of menfolks in the household. Women have no control over family finance, not even to what they themselves produce. This creates a situation where there is no incentive for women to produce surplus. Lack of economic opportunity for girls and women in their villages is pointed out to be the main cause of girl trafficking.

TECHNOLOGICAL CONSTRAINTS

Agricultural activities and household tasks are still performed in traditional manner. Agricultural tools and household equipments are primitive and labour intensive. Women are denied of technology, because it is culturally inconceivable that women are capable of developing and using technology. In the areas where technology has come into effect, in many instances it has detrimental effects in women's tasks, income, and health. In other instances, when technology is developed to lessen women's burden, men folks take over the tasks (Pradhan, 1985). Women toil from dawn to midnight for agricultural activities and household tasks, but the productivity is so low that families do not have adequate goods and services to alleviate their poverty.

Very little research has been done in the field of lessening women's time and effort in household work. Improved stoves have been developed and distributed. However, development of these stoves is targeted to save forest by saving fuelwood for cooking, rather than saving women's time and human energy directly while cooking. Food procession, cooking, serving the meal, cleaning and washing take the largest chunk of women's time and these activities are extremely tiring. Instances are found where up to five hours daily might be spent in cooking alone (Cecelski & Bajracharya, 1990). However, nothing has been done in terms of research and technology development directly related to these activities. Time and human energy expense for women is very high but, energy re-creation in terms of calorie intake is very low due to lack of sufficient food. In times of food scarcity, it is the women who sacrifice their share. This leads to high morbidity rate for women in general, and pregnant and lactating women in particular. The maternal mortality rate is one of the highest

(850/100,000 per year) in the world (World Development Report, 1988): Because of high fertility rate, most of the women are in constant cycle of pregnancy and child birth. Mothers' ill health and lack of education about health, nutrition, and sanitation have disastrous repercussion on foetus, new born, and the growing children.

SOCIO-CULTURAL CONSTRAINTS

Our socio-cultural norms are that women perform most of the household activities. In subsistence economy, women also perform agricultural activities. Hence, women are exhausted with work. But when it comes to distribution of income, the same socio-cultural norms dictate that it is the male who should get the larger share. From inheritance right to mere access to food, women are deprived of their share.

One cannot deny the importance of women's role of biological reproduction, generational reproduction, and daily reproduction/maintenance which are crucial for social survival and economic development of a nation (Bernstein, 1988; Ellis, 1988). When we talk of women's role of biological reproduction, the "child bearer and nurturer" role of women comes into effect. This role of women is key to providing labor force to a nation. The quality of labor force depends on women's own human resources, such as health, and skills in mothering. The generational reproduction refers to the role of women in providing healthy, educated, moral and socially well adjusted citizens to a society that ensures equally or more sound and healthy next generation. This role of women in human capital formation is crucial to achieve desired social transformation. Women's own education becomes crucial to perform this role.

The daily reproduction refers to the role of women as "provider" and "nurturer", where women meet the daily needs of both children and adult members in the family. Women meet their bio-physical needs by providing food, clothing, physical care, etc., and psycho-emotional needs by giving love, affection, moral support, etc. Performance of this role demands women to have a great quantity and quality of endurance and dedication.

However, our society does not recognize women's contribution to economic development and social sustenance. Socio-cultural constraint not only denies health, education, and training, but it limits women within the four walls of the household. Women are denied of their basic human needs and rights like public and political participation. Their contribution is grossly neglected. Social negligence leads to economic undermining. Condition worsens when households are poor. When there are less resources to share, the socially oppressed and weak (women) get exploited through deprivation of their share in intra-household distribution.

CONCLUSION

The Ultimate unit of decision making that affects an economy or a society is the household (family). Women's role as managers is central in the household (family) and crucial for economic well-being and social sustenance. Unless and until their human resources are developed, poverty can not be alleviated. The above mentioned constraint-

play a detrimental role in perpetuating the vicious cycle of low status of women, low productivity, and poverty. These constraints are interrelated and most of the times affecting each other adversely, accentuating problems. In order to intervene and to break the vicious cycle, there should be a holistic approach to the problems. In the same manner, interventions should be targeted to eliminate the multifarious problems as a whole. Keeping this in view recommendation are made based on ecosystem approach to household resource management. It is hoped to provide better understanding to policy makers, project planners, and field workers engaged in poverty alleviation.

RECOMMENDATIONS

Change in values and attitudes

The main constraint leading to low status of women and resultant poverty is our social values and attitude towards women. Even though women's contribution is crucial for social survival and economic well-being, the society does not recognize it. Instead, their role is undermined and their contribution devalued. There should be a change in attitude towards women's role, their contribution, and need for their human resources development.

Change in social attitude can only be achieved if there is a true political commitment from the section of people who are in power and position in the society. Ours is a patriarchal male-dominated society. Male members have more decision making power and they are in policy making positions. They really are the ones who have to commit themselves towards change rather than just being rhetoric. The women folks who have relative advantages of education and social freedom should speak up for women's economic rights and social justice.

This can be done through educating the mass. Practicing what one preaches and being an example is the best way of educating others. Both males and females who are in power and position in society should show (through their own deeds) that sons and daughters should be given equal economic opportunity and social justice. There is no chance of betterment if patriarchal legitimacy is not broken.

Technology Development

Women's time and energy have been wasted due to low productivity. They drudge every day for long hours in disagreeable conditions, without being able to produce much. So, development of technology is recommended to facilitate their work, which will result in increased productivity and improved quality of life. Increased productivity will spare women from hard labour resulting in increased welfare in terms of free time. Women's increased free time will have implications on women's time available for child care, education, and training.

While developing technology for women, they should be activated in planning, implementation, and management. They should be consulted as to which technology/technologies they perceive to be necessary. As mentioned above, in many

instances agricultural technologies have detrimental effect on women's work, health, and income. Detail and extensive research should be carried before the development of technology, so that it will really be beneficial to women in terms of increasing their productivity and improving their quality of life.

As a great portion of women's time is spent on home making, technologies to reduce women's time in household chores should be developed. Food processing, cooking, water fetching, fuelwood collection, and cleaning and maintaining the house are activities which are both time and energy consuming. Grinding and husking mills are a great relief to women. However, these mills should be extended to their villages, and should be affordable too. Improved stoves should be improved more. As in many instances, these stoves which had been improved more. As in many instances, these stoves which had been distributed free, are lying idle in many homes (Manandhar, 1985). Furthermore, these stoves had been designed to reduce fuel consumption, hence save women's time indirectly through reduction in time for fuelwood collection. The direct effect of reducing time and human energy while cooking itself is not considered.

The largest amount of energy user in Nepal is the household sector and most of it goes for cooking. In this respect, technology developers should think about developing affordable cooking utensils which cook food in lesser time needing lesser amount of fuel but, still maintaining the traditional menu and taste.

The effect of deforestation on drying aquifer force women to go farther and farther away to fetch water. Tap water provision will save women's time in water fetching considerably. This will also reduce morbidity and mortality caused by lack of sanitation

Development of alternative energy for cooking, such as, biogas, solar, LGP, and electricity eliminates time for fuelwood collection (2.0 hours per day) (Kumar & Hotchkiss, 1988) and reduces time in cleaning. Because these fuels do not create smoke and soot. This will also reduce the incidence of bronchial infections in women and children caused by smoke (Panday, 1984). Even if equipments used for these fuels may take some time for maintenance and cleaning, it improves the quality of life through improvement in work-environment. Women do not have to suffocate in a dark room filled with smoke, ash, and soot.

While developing technologies to reduce women's time and energy it is recommended to take into account the ergonomics of performing tasks. Women tend to avoid technologies/equipments which are not designed to match "their way" of performing tasks.

Delivery System

Education and training for women is the key to raising status of women. Education is negatively related to fertility and positively related to income, health, sanitation, and nutritional status of the family (Murdoch, 1980). Training in agriculture, home making, and mother craft will increase their productivity. However, just mere delivery of these services is not enough. The timing, location, and setting of delivery system is very important. Women cannot attain education and training classes

when they are busy with their household and agricultural works. Girls can not attain formal classes where they can not take their little brothers and sisters along. Hence, it is recommended that education and training be offered during agricultural slack season, when they are off their household chores, in proximity to their homes, and in an informal setting.

Apart from above discussed aspects in education and training delivery, the subject matter itself is crucial. Education and training be such that it will lead to increase in knowledge and skill about their own life support system. Crucial subjects like environment, agriculture, management, technology, sanitation, health, and nutrition are recommended.

Population control is a must for poverty alleviation. Fertility planning should be an integral part of overall economic planning. In most instances, desire for more children has come from the fact of high infant mortality rate. Hence, rapid reduction in infant and child mortality is necessary. In order to achieve this, one effective measure is provision of pre and post natal care for both the mother and the child. In villages, the incidence of pregnancy is a private matter of the woman. However, if we were to reduce infant mortality, the incidence of pregnancy should not remain a private affair of the women only or the members of her family only. It should be reported like other vital statistics registration. Once the incidence is reported, the registration office should refer it to the local health center. The local health center should then follow up with pre and post natal care and counselling. This will result in higher chance of survival for both the mother and the child. The family planning centers should also readily deliver modern birth control facilities where there is demand for fertility control. Only 15% of married women of childbearing age use contraception. As a result the fertility rate is still very high (5.7) (World Bank, 1992).

It is already mentioned above that delivery of tap and well water in the village reduces women's time in water fetching considerably and improves health and sanitation status of the family. However, sustainability of delivery system can be achieved with involvement of women for its upkeep and maintenance (UNICEF, 1991).

Delivery of tap and well water, alternative energy for cooking and food processing, technical innovations in agricultural tasks, and reduced fertility will free women for education and training. With their skill development and increased free time, they can be engaged in gainful employment. With change in social norms and attitude towards women's work, the gainful employment will be welcomed by the family. It not only results in increased self-esteem for women but, it results in improvement in children's health and education. It is found that females are inclined to spend their income more on food, clothing, and education for children than males (Jaquette, 1988). A study found that 60% of a Nepalese woman's income was spent on children and family food consumption (UNICEF, 1992).

Even if these women are skilled and have time for gainful employment, they do not have access to productive capitals. This poses a drawback in their endeavor and enthusiasm. Hence, it is recommended that credit facilities be delivered. Dr. Muhammad Yusuf's brilliant concept of Grameen Bank in Bangladesh is an example worth

followings, where credit is on nominal value but, women can draw maximum benefit from it. Production Credit for Rural Women (PCRW) is established in Nepal with a similar philosophy and implementation process as that of Grameen Bank. However, despite its contribution to improvement in women's income status, the program has not been able to reach majority of Nepalese women who are in desperate need of credit.

Motivation and Support Group Formation

When we talk about women in development, we should think of them as participants in development not just beneficiaries. Women get empowered when they are in a group rather than as individuals. As a group they have higher motivation and greater bargaining power. Hence, it is recommended that they should be facilitated to form support groups. Women with similar problems and situation can talk to each other, discuss their problems and aspiration, and come up with ideas to solve their problems and achieve their aspirations. They can form groups and help each other in income generation, in child care, elderly care, labour pooling, equipment pooling, information exchange, or just providing moral support. From technology development to delivery and dissemination process, these women should be constantly consulted. Because they are the best judge of what is good for them. This way social transformation will occur of their choice, which will guarantee sustainability. The intervention should be geared towards facilitating their aspirations, rather than changing their way of life.

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