M.SC FORESTRY THESIS RESEARCH AT PAKISTAN FOREST INSTITUTE, PESHAWAR 1998-2000 COURSE

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Siltation of Mangla reservoir and its remedial watershed management practices by Raja Humayun Zulfiqar (Advisor: Ch.Abdul Khaliq)

The objectives of the study were to evaluate the effect of watershed management practices on water and sediment yield and estimate the annual siltation rate. The required set of data was collected through the periodic hydrographic survey reports of WAPDA.

The analysis of data revealed that the estimated figure of average annual sedimentation at the initial stage was 90.07 MST that kept dropping from 1967 to 1997 to the level 60.36 MST (Currently recorded). Watershed management practices proved to be a useful tool in reducing sediment load in the reservoir. From the periodical sediment survey carried out by WAPDA in 1970, 1973, 1978, 1983, 1993, and 1997, it is evident that the rate of silt deposition is gradually decreasing and the life of the reservoir is now estimated to be more than 172 years as compared to 80-100 years estimated before the undertaking of the Watershed Management Scheme. The continuity of the project will definitely result in reduction of sediments down into the dam.

Impact of watershed management practices under integrated land management project (ILMP) Poonch/Bagh (A.K) on socio-economic conditions of local inhabitants of Rawalakot range by Iftikhar Ahmad Khan (Advisor: Syed Zain-ul-Arifeen)

The study was undertaken to determine the impact of watershed management practices carried out under integrated land management project Poonch/Bagh. Eight villages were selected for survey of varied number of respondents. A questionnaire was designed to collect the required set of primary data. Secondary data were gathered from relevant offices of ILMP (Rawalakot), and planning and development department (Muzaffarabad) etc. The results revealed that the watershed management practices under ILMP have contributed towards the stabilization of the soil in the areas of erosion and land slides. The project has enabled the local inhabitants to meet fuelwood needs from fast growing species such as *Robinia pseudoacacia* and *Ailanthus* spp. and contributed towards the increase in crop yield. The project has also created the opportunities of

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employment for local inhabitants of the area. The project activities increased the annual income of local inhabitants to some extent from their lands and livestock.

Though the improvements in socio-economic conditions of local inhabitants have occurred on account of watershed management practices under ILMP yet limiting factors such as unawareness about importance of watersheds, small landholdings, large family size, and low level of literacy have significantly influenced the extent of improvement in socio-economic conditions of the people in the study area.

Choice of species and incentives needed for the adoption of agro-forestry as poverty alleviation and environmental conservation strategy in district Bannu by Khurshid Ali Khan (Advisor: Dr.Muhammad Noor)

The study was conducted in district Bannu and focused on identification of species preferred and incentives needed by various socio-economic groups for the adoption of agro-forestry. The two stepped narrowing down selection approach was adopted and followed by random selection of two villages and fifty respondents. Semi-structured and open ended question were used to obtain data and information related to the study.

The study concludes that the choice of species is dynamic in nature and has gone through a process of change during the last couple of decades. The change can be attributed to factors such as socio-economic, ecological and managerial in nature. The study revealed significant relationship of income and farm size with the choice of species.

The choice of different categories of respondents significantly diverges. The absentee owners preferred industrial species due to less supervision, monetary orientation and no sharing obligation. Owner cultivators favoured fast growing multipurpose trees and industrial species on account of quick returns with broader range of benefits. Owner-cum-tenants prefer fruit trees and fast growing multipurpose trees for the reasons of fetching maximum benefits and diverse range. Fruit trees are preferred because of less competition with agricultural crops and meeting fuelwood requirements of the household. Tenants go for fast growing multipurpose trees due to more surety for non-timber tree products. The landless have a conditional preference for fast growing multipurpose trees. They condition it with allocation of land and loans in their favour. Timber trees are relatively less preferred by all categories for the obvious reason of long gestation period.

The attitudinal orientation of various social groups towards tree species in some cases, is not directly affected by their economic considerations. The relationship of professions with the choice of species is found to be significant. The study reveals that the loss in agricultural crop is not only effectively met but also considerably surpassed

by the value of trees. A major portion of the sample population however, was found unwilling to grow trees on the basis of perceived damage to the agricultural crop. *Acacia nilotica, Tamarix aphylla, Albezzia lebbek, Eucalyptus* and poplar species were perceived causing more pronounced damages.

Among incentives, the leading inputs demanded were planting material, irrigation water, improved species, monetary support and provision of fertilizer. Services asked for better extension were messages and materials as an incentive. Vegetative treatment of eroded and waste land by the state agencies can also be of great service in extension. An important category of incentives demanded was of institutional nature on one hand and customary on the other. The former includes allotment of land on lease and exemption from water charges (Abiana) while the latter refers to apportionment of adequate share of tenant in tree crop.

Community perception and participation scope for Dolphin conservation in Indus Dolphin reserve by Javed Ahmad Dahar (Advisor: Mian M.Shafiq and Raja M. Zarif)

The proposed study was carried out to determine the nature of threats posed to Indus Dolphin by the human. The study also aimed at knowing the social perception and to chalk out plan for protection of Indus Dolphin through fishermen participation. The selected area was the Indus Dolphin Reserve, carved between Guddu and Sukkur Barrages of about 180 kilometers in length.

Results reveal that coordination with sister department (fisheries) is lacking and fishermen are not aware about importance of Indus Dolphin. Majority never cared of it while fishing. Respondents were of the opinion that the presence of Indus Dolphin is detrimental to the fish-catch, a major source of their income. Mortality of Dolphin through fishing nets was common during the dry season. Analysis of socio-economic data indicate that the education level is very low among fishermen and they are living below poverty level. They also lacked basic facilities of daily life such as schools and hospitals. They have never been approached by any organization for making them aware about Indus Dolphin. The study revealed that there is dire need to create awareness among them. Their active participation is vital for the conservation of Indus Dolphin, a unique fresh water mammal of the world.

Fuelwood conservation in rural households of tehsil Attock by Muhammad Saqib Awan (Advisor: Raja M. Zarif)

A sample survey of nine selected villages with ten households from each village, was undertaken to study fuelwood consumption and supply pattern in rural areas of tehsil

Attock. The sample households were interviewed as per structured and pretested questionnaire. In all, 90 respondents were randomly selected and interviewed.

Data analysis revealed that fuelwood is the major source of household energy in the area. About 83% of the households depend on fuelwood and other cheaper fuels. Only 17% of the households were found using efficient commercial fuels (LPG, Kerosine etc.) for meeting their energy needs. The data show that the average household size in the study area is almost 6 persons. The increase in household size leads to increase in total fuel consumption. However, the per capita consumption decreases with increase in household size. Crop residue and dung were mainly used by the household of the lower income groups whereas kerosine and liquid petroleum gas (LPG) were preferred by the households of the higher income groups. People prefer to use fuelwood instead of other traditional fuels such as crop residue and dung.

The afforestation programme in the area has provided an opportunity to the farmers to generate goods and services for self as well as for others. The increase in planting has some what reduced the pressure on adjoining forests for the procurement of wood. The price of fuelwood is increasing in the area but at lesser rate then the increase registered for the prices of other essential commodities.

The fuelwood supply to market is mostly coming from local farm lands and other parts of the district. A small quantity of fuelwood from government forests is passing through regular market channels. However, population residing near to the forests area is totally or partially dependent upon forest resources. The fuelwood market in the Attock is increasing in size and quantity. The prospect to more competition and establishing market near to the residential area are very high. The data indicate that government and forest department must concentrate on planting commercial and individual lands instead of farmers through incentives and participation of NGOs and credit programme. The extension service and distribution of free planting stock to the farmers can increase present planting rate on farmlands.

Farmers' attitude towards tree planting in Attock district by Jamil Ahmed Khan (Advisor: Raja M. Zarif)

The proposed study was conducted in district Attock to find farmers' attitude and perception towards tree planting. Random sampling technique was adapted to obtain requisite data and information from a sample of 180 respondents through structured questionnaire. The study concludes that the majority of the population owned sufficient area to grow trees. The average monthly income of the sampled population was found to be Rs.8322. The highest income was earned by those who have business in addition to agriculture but agriculture still remains dominant source of income in the study area. About one third of the sampled population was found living below poverty line. The

study concludes that the sample group falls under category of poors as per worldly standards.

Farmers' perceived that trees are increasing on the farmlands and none of them believe in monoculture. Majority of the farmers (91%) was willing to continue tree growing business but only 33% of the total respondents was willing to purchase seedlings. The study indicates that 48% of the responding farmers earned money from the tree component of their farmlands. Substantial saving was found accruing to the tree growers due to fulfillment of their domestic requirements of wood from their own tree resource.

The data also indicate that the majority of the farmers hesitate to grow trees because these hinder agricultural crop production. They demanded incentives in terms of free seedlings and financial assistance. The farmers also perceived development of adequate market mechanism to promote tree growth on private farmlands. The relationship between willingness to pay for seedlings and willingness to continue tree growing was found significant. The monthly income of the respondents was found ineffective to the future of trees on farmlands. Expansion of forest extension services, introduction of fast growing multipurpose trees, free of cost supply of planting material and establishment of functional linkages between agriculture and forestry research can promote tree cover in the area.

Impact of joint forest management as an alternative sustainable management technique in key - Area III of Siran Forest Development Project by Malik Sagheer Ahmad (Advisor: Raja M. Zarif)

The experience in different countries of Asia like Thailand, India, Nepal and China has proved the importance of community involvement in the management and development of forestry resources on sustainable basis. A similar approach of Joint Forest Management (JFM) has been tried in the state forests of Hazara NWFP on two locations through Siran Forestry Development Project (SFDP) in recent years. This study was conducted to assess the impact of this model as alternative sustainable management technique to replace the old traditional system, which over the ages has isolated the communities from the unavoidable forest use and thus failed to sustain these as such.

The study concludes that JFM is a sustainable technique of improving the current conditions of the forest and its further development through active participation of the partner communities through incentives and recognizing them as responsible management partners. The approach being innovative and passing through the preliminary process of awareness and learning both for the communities and the forest staff. It can prove a better technique if the confidence and optimum resource use level is established between

the two managing partners. This can be done through increased awareness, coordination, and training of both the communities and the forest staff. The JFM technique so far proved successful in key area III and can be replicated in the areas of similar conditions throughout Hazara.

Household fuelwood energy consumption in Municipal Area of Mingora, Swat by Irfan Ullah Khan (Advisor: Raja M. Zarif)

The fuelwood consumption pattern was studied in the municipal limits of Mingora, Swat. The aim was to judge the attitude of people towards natural resources and study domestic fuelwood consumption pattern and list the species preferences of the people residing in the area. The sample survey covered randomly selected 10 wards and 10 respondents from each ward were interviewed by using a structured questionnaire.

The data show that the average household size in the area is 7 persons. The increase in household size leads to increase in total fuel consumption. However, per capita consumption decreases with the increase in household size. The average household consumption was composed of different fuels. LPG is being used by the majority (80%) for domestic purposes, only (18%) people have dependency on woodfuel. Kerosene oil is used by a very small percentage of the population (2%). However, consumption of fuelwood increases to a greater extent during winter months. During this season, the majority households use it for heating purposes.

The average per household fuelwood consumption was estimated to about 3100 kg per annum. The LPG consumption was about 440 kg per annum per household. The demand for LPG was growing at a faster rate for domestic uses. With the increase in income level and the convenience in its use, it is expected that in near future its consumption rate will increase remarkably which, in turn, may decrease the dependency of the people on woodfuel. Still there is a need to improve the tree cover under social forestry activities and conserve and manage the depleting natural resources which may costs very high to bring back in its original form. The NGOs may also be involved in addition to the forest department for afforestation on the communal and waste lands.

Marketing and flow of Poplar in Peshawar and Mardan valleys by Muhammad Ibrahim Khan (Advisor: Raja M. Zarif)

Peshawar and Mardan valleys are famous for its agro-forestry practices. Poplar is extensively grown along water courses, boundaries of agricultural fields and is considered as an important cash crop. Poplar, being a multipurpose tree, is demanded throughout the country. Most of the poplar wood is supplied by this valley to other parts of the country but no comprehensive study has been carried out on flow and marketing

of poplar. Thus a survey was conducted to quantify the flow of poplar in-side and outside NWFP and its marketing system.

The study revealed that poplar, shisham, bakain, willow and mulberry are main species marketed in Peshawar and Mardan valley. Ten percent of the poplar wood production is consumed within the boundaries of the valleys. The forest department from Peshawar-Mardan valleys, on average, realizes Rs.9.36 million per annum by laving duty on issuance of transit passes. The data analysis indicated that 98 percent of the poplar wood passing through three check posts i.e., Khairabad (72.6%), Islamia College (7.3%) and Kohat Road (20.1%). Dealers bought poplar from middle men at Rs.28 per cft while from farmers at Rs.29/cft. The average selling price offered by dealer to purchaser in market is Rs.32/cft while to middle man is Rs.31/cft. Middle man earns Rs.1/cft at market place and Rs.5/cft if he supplies to other traders. The price analyses of different sizes of poplar showed that poles of smaller diameter having higher price index and more economical as compared to bigger classes, but formers are ignorant. It was also found that rotation age of poplar is kept 7 years and all the poplar supplied to markets was exclusively from farm lands. Based on flow figures, the growing stock of poplar was estimated as 178 trees per hectare. The total growing stock in the valleys of different age classes was estimated as 56.02 millions.

The state of people's participation in watershed management of Kunhar watershed by Taimur Ilyas (Advisor: Dr.S.M.Rafique)

The proposed study was carried out to know the socio-economic conditions of the community and it's involvement in the project to increase the desired vegetative cover through proposed interventions. The data for the study were collected through a survey of randomly selected VDCs and 50 farmers of Kunhar Watershed Project (KWP). The respondents were interviewed using a comprehensive questionnaire. The data were compiled using simple statistical techniques.

The study concluded that large majority (60%) of the respondents in the target area were engaged in more than one job i.e. farming as well as government/private service. The average literacy rate was 68%, whereas the average family size was 7 members. The monthly income of 48% respondents was equal to or greater than Rs.4000. A major portion of the population (44%) lived in cemented houses while the percentages of those living in mud and both cemented and mud houses was 32% and 24%, respectively. Almost all the people in the target area possessed rainfed cultivated as well as uncultivated land. The uncultivated land was mostly a combination of range land and planted land. The main source for obtaining cooking and heating energy in the area was fuelwood.

The project involved only a small fraction (26%) of the target community in planning and monitoring while there was no community participation at the evaluation stage. The community involvement at implementation stage was considerably high (88%). The percentage of people involved in planning, implementation, monitoring and evaluation is 26, 11, 88, and zero, respectively. As a result of the project interventions, the vegetative cover increased from 8.4% to 16.4% of the planted land over a period of 7 years.

Soil conservation in Ayubia National Park by Saadullah Ayaz (Advisor: Syed Zain-ul-Arifeen)

Ayubia National Park, a protected area in the Gallies Forest Division, has a rich vegetation of Himalayan mixed moist temperate type with predominance of conifers. It is very rich in biodiversity and provides an excellent habitat for important wildlife species. Many techniques to reduce erosion losses were developed in the study area.

The study data revealed that methods of soil conservation by use of masonry structures like check dams has proved to be very successful and effective in reducing the amounts of silt discharge and other sediment load from the watersheds. The control of soil degradation through engineering structure if executed will prove very useful to enhance the ecological conditions, biodiversity and environment in Ayubia National Park. In addition, this activity will provide more job opportunities to the local peoples and will help in the poverty alleviation in the rural communities of Galliat areas.

Role of village organizations in the sustainable management of common property renewable natural resources in lower Swat by Syed Muqtada Shah (Advisor: Dr.Muhammad Noor)

In district Swat, a project entitled Environmental Rehabilitation Project (ERP) was implemented during 1994-2000. ERP aimed at arresting resource depletion and environmental degradation in the area. It worked through village development committees (VDCs) in villages. Focus of the VDC role was to regulate use and management of natural resources and main goal of ERP was strengthening VDCs.

The study was conducted to explore the role of village development committees (VDCs) in the management of common property renewable natural resources (CPRNRs) in lower Swat area. Main objectives of the study were to: 1) compare the role of the VDC's in Sustainable Management of CPRNRs with the past systems. 2) explore the constraints of VDC's and suggest measures for their improvements.

Two stepped narrowing down approach was adopted in selection of the three potential villages for case study. In step one 26 villages with established VDC's were identified while in step two, the most potential villages of Barikot, Ghalegy and Dedawar were selected for case study, in Saidu Sharif and Kabbal units. Fifty respondents were randomly selected in all the three villages amongst the entitled owners, users of the CPRN-resources and VDC members. Questionnaire, VDC meetings, open ended/semi-guided interviews and available record were used as tools for exploration.

The data analysis indicate that organizationally VDCs take care of both privileged (owners) and marganalized (tenants, gujars etc.) segments of the village. VDC works as a bridge between local community and forest department. It resolves the conflicts, provides opportunities for leadership through decentralized election/selection and integrate with Jirga for decision making. Technically the sphere of the influence of VDC is the communal hill side. *Nagha* is the main technical feature in the management. Forest Department also supported this Nagha, at least unofficially. Qalang system has been banned in communal hillside for controlling the use of the resource. Non-owners have shared the local quota of timber from natural forests.

Income generation through local resource use such as grass cutting passes, pine needle collection, membership and monthly subscription fee, etc. has been innovated. Sustainability of VDC is still a dilemma and potentials of VDC have not been explored till now. Constraints of the VDC's were the lack of technical and financial support, which were required for the full maturity of the VDC's, established by ERP.

Role of AKRSP in the management of natural resources in Skardu, Baltistan by Zakir Hussain (Advisor: Raja M. Zarif)

The Aga Khan Rural Support Programme (AKRSP), established in 1982, improved the living conditions of the rural folks of the northern region. However, in Baltistan, it started its activities in 1986. During the last 14 years AKRSP interventions have resulted in increased production through improved farming systems, introduction of new breeds and varieties and enhancement of the skills of the farmers. The present study was conducted to determine the impact of the AKRSP programme's initiatives on the socio-economic conditions and management trend of natural resources in Baltistan district.

Most of the sampled respondents reported that they have been provided saplings of fruit as well as forest trees. Introduction of alfa alfa for inter-production has increased and farmers earned some cash income. Veterinary services especially vaccination and medication had great impact on the reduction of mortality rates. A large number of village specialists also got training courses for effective use of the natural resources. The AKRSP, must integrate all the natural resource based farming activities in a well-

balanced fashion for sustainable development. However, the overall performance of the programme is quite satisfactory and the results are commendable.

Impact of joint forest management as an alternative sustainable management system in key - area I of Siran Forest Development Project by Muhammad Tehmasip (Advisor: Raja M. Zarif)

Joint Forest Management (JFM) was introduced for the first time in the history of Pakistan by Siran Forest Development Project in two key areas of district Mansehra. The study was conducted in order to find the impact of JFM as an alternative sustainable management system in key area I.

The primary data were collected through random sampling of the target community. The analysis revealed that the field staff and community are working in emotional isolation but with a cooperative attitude to manage the resources on proper lines. All the respondents viewed the JFM as utter failure because of loosing check on grazing and smuggling of wood. The reasons for failure of JFM enumerated by the parties were: less protection, injustice in distribution of benefits, political influence and favoritism.

The community was found aware about the objectives and goals of the JFM but failed to perform upto the desired level of the forest department and general public. The opposition to JFM committee is politically, socially and economically more stronger and working together due to their vested interest. They exploit the situation to a greater extent whenever chance is provided by the committee. JFM was basically designed for uplift of degraded areas. However, the areas were not socially so difficult to manage because of absence of commercial value resource and lesser number of stackholders.

The community in the study area was not as homogenous as in key area III, therefore, the chances of conflict without any amicable resolution were higher. In principal, the approach was bottom up but in practice it remained top-down. This also contributed towards the in-efficiency of JFM. The awareness among women could not be made because of social limitation. Although, they were the major users of the resource but could not participate effectively as envisaged by the JFM project.

Participation of women in decision making regarding planting trees on farm lands in district Attock by Saiqa Farhat (Advisor: Safdar Ali Khan)

The study was carried out to identify the role of women in tree planting and decision making on farmlands of district Attock. Data were collected by using questionnaire from a random sample of 62 household female respondents. The results of

the study indicate that mostly male act as heads of a family. On average, seventeen percent households, women are acting as head of family. The female-headed families are less affluent than male headed families. The literacy rate is gradually increasing with passage of time and women are interested in educating their daughters. Decision making authority regarding farming is vested in the male members of the family. However in male headed families about 20 percent and in female headed families 33 percent farming decisions are made by women. Decision making power increases with age. Education is common in female of higher status families, who are neither self cultivator nor tenant. With the increase in education of female there is increase in the liberty for female to give suggestions and recommendations to male and to make decisions in the absence as well as in the presence of male.

The society dislikes the participation of female in farming practices. But data indicated that 79 percent of the female respondents confirmed their equal participation in tree planting. Female gender of all the social groups is in favour of growing trees probably because of scarcity of wood for energy. The number of women planting trees increases with education and age. Ninety one percent of educated women have planted trees as compared to 67 percent of uneducated women. Women belonging to low social and illiterate groups believe in gender difference. They perceived male as more wiser than female. The data analysis revealed that due to change in the socio economic condition, the women are participating in decision making regarding farming and other important family affairs.

Participation of women in decision making regarding planting trees on farmlands in district Bannu by Sadia Mujeeb (Advisor: Safdar Ali Khan)

The objective of the study was to determine participation of Bannuchi women in decision making about tree planting and circumstances under which they play this role. Data were collected through random sample, using questionnaire. 35 eldest females in five villages of district Bannu were interviewed. Twenty percent families were headed by females. In thirty percent families, decisions about farming were made by females. Sixty percent families having educated males, do not discriminate on the basis of sex and do consider suggestions of female about farming and other important family affairs.

The study also revealed that higher percentage of educated women, belonging to prosperous families, take more interest in trees. More than 50 percent women of the sample population have planted trees, both inside houses and on farms. They are mostly older in age and help their male family members in farming. Educated women from affluent families do not perceive superiority of male over female. Seventy eight percent women rate male more superior to them.

Like other Pakhtoon clans, the role of Banuchi women also varies with age, socio-economic status of family, ethnic group to which she belongs and presence or absence of male member in the family. Customs and traditions are commonly perceived as major constraints for womens' participation in the economic and public affairs in Bannu. However, due to social and economical changes, traditions are not very strictly followed.

Role of local communities in conservation of natural resources in district Mardan by Shagufta Ikram (Advisor: Dr.S.M.Rafique)

In order to introduce proper management and conserve natural resources, the Pak-German Integrated Rural Development Programme was launched in Mardan during 1984. The main objectives of the study were, to know whether the natural resources in the district were improving and being used efficiently or were degrading more and more, and whether communities and the project are really involved in vegetation conservation or not.

The data were collected from nine villages of district Mardan. The villages were selected through purposive sampling and sixty respondents from 9 different villages were selected by random sampling technique. Survey was conducted through questionnaire-cum-interview technique. The results revealed that the main occupation of the respondents was farming. Their average family size was 8 persons, their education level was quite high with income ranging between 1000-5000 rupees per month. The land holdings of the respondents were 80 to 250 kanals on the average.

The study showes that communities are playing their role in conservation of natural resources through establishing community organizations and RCDs. People with large landholdings have more experience about the use and conservation of resources. They are confident enough and ready to use their holdings for increasing the vegetation resource cover. Education has also proved to be an important factor. Educated people have been found more serious about the resource-related issues. The people are willing to contribute money and labour for various works like, erosion control, increasing vegetation cover etc. They are very cooperative and aware of the new demands and conditions related to natural resources.

Women contribution to participatory watershed management of Daur Watershed Project by Shama Ambareen (Advisor: Dr.S.M.Rafique)

Watershed Management Project was embarked in Daur area as early as 1964-65 but the serious efforts were made in the year 1971-72 by launching large scale projects under World Food Programme (WWP) upto 1982-83. This was followed by Tarbela and

Mangla Watershed Management Project in Hazara and Malakand Civil Divisions from 1983-84 to 1992-93. Its second Phase from 1993-94 to June 2001 is ongoing.

The study aimed to assess the participation of women in development of natural resources, and to enhance the socio-economic conditions of poor women by imparting training in different fields i.e. nurseries, embroidery. kitchen gardening etc. Data were collected by conducting social survey in five villages where women organizations formulated and found working. Fifty respondents were randomly selected. Survey was conducted using questionnaire-cum-interview technique.

The data analyses revealed that majority (64%) of respondents were landowners. The average literacy rate of sample household was 50%. The monthly household income of 52% respondents was Rs.2000-3000. The majority (58%) has shown their interest in the saving schemes. The average family size was 6.4 members. 70% of them depended on agriculture for their livelihood. 66% percent of women contributed in household income by different types of work like embroidery, nursery raising, poultry, dairy products, fruit and vegetable preservation etc. in which they were given trainings by the project. Women have shown their positive attitude towards the out door watershed activities as 68% have done planting 40% and 44% have constructed check dams and raised nurseries respectively. Mostly (70%) collected fuelwood from farms and 60% from forest were comprised mixed tree species. The average consumption of fuelwood was 30 kg/day. The members of women organization were expecting that their socio-economic conditions will improve and vegetative cover will increase with the activities of watershed project.