

SOCIO-ECONOMIC PROBLEMS OF FOREST DWELLERS OF MINOUDASHT FORESTRY PLAN AREA OF GOLESTAN PROVINCE IN IRAN AND ITS IMPACT ON THE HEALTH OF FOREST

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ABSTRACT

This study was conducted to find out the relationship between socio-economic problems of forest dwellers of Minoudasht Forestry plan of Golestan Province of Iran and their dependence on the forest. All families from sampled boundary villages and one village inside the forest were interviewed for assessing the (a) socio-economic status of the forest dwellers (b) extent of forest use by the forest dwellers/villages and finding out the ways by which the socio-economic status of people can be improved and at the same time minimise the pressure on the forest. It was found that the land holding per household is not high (1.5 to 5 hect.) male female ratio is in favour of female; major source of livelihood is agriculture and stock breeding; high price of fodder has made the grazing /lopping a common phenomenon and thus rise in pressure on forest for fodder besides other uses – fuelwood, raw material towards building houses, fencing, medicinal items etc.. It was also found that with the rise in population, area under forest has declined. Major suggested ways to improve the socio-economic health of the people and also the forest conditions, were improvement in educational status, ensuring the fulfilment of basic needs of forest dwellers/villages, villagers' participation in planning, augmentation and creation of earning opportunities, cooperative approach to the problem and changes in fuel consumption pattern.

Key Words : Socio-economic problems, Forest dwellers, Health of forest, Raw material, Economic growth

INTRODUCTION

Forests and Pastures are considered as the basis of life and hold a prime importance not only among the scientific communities but also among the general masses and serve as a precious heritage which not only belongs to the present generation, but also future generations.¹ They are also considered as a safe heaven for economical and social development and serve as a large reservoir for water production and its storage, a back-up for biological productions a base for agriculture development and a place

for relaxation and entertainment at free times, a mean for job creation, a mechanism for soil stabilization and for control of mobile sand and also a system for the absorption of pollutants.²

The precious national wealth creates different jobs for community and leads economic growth³. Mankind from the beginning of the life has always enjoyed these forest benefits. But now, unfortunately humans did not regard and appreciate its important role in economic and social life; rather they have misused it. During the recent three decades,

the area of north Iran forest have been significantly reduced (from 3.4 million hectares in 1962 to 1.9 million hectares in 2006).⁴⁻⁶

The apparent reason seems to be rise in population, change in the thinking and living style, specially of that compartment of population who lived inside and or on the periphery of the forests. But what was the exact position was not known.^{7,8} Hence this study has been undertaken with the following objectives:

1. To find out socio-economic status of the villagers (forest dwellers)
2. The extent of forest use by the villagers of the existing villages.
3. The way by which we can improve their economic and social status and minimise the pressure on the adjacent forest cover.⁹

MATERIAL AND METHODS

It consists of sampling data and analytical tool.

Sampling

First of all villages inside and on border line of forests were enlisted and accordingly, the villages on boundary region of forests were enlisted as :

Azadaran
Sasang
Emambdollah
Node Khandur
Node Hasilar
S eiyedabad
Nils
Rahimabad
Farsiyan – Sosara

Village inside the forest was Sarage
Mohammad Husain

Division of boundary villages was done into three groups, based upon their population, and these are:

1. Less than 60 families – Rahimabad, Nili, Saiyadabad.
2. Between 60-120 families – Farsiyan, Azdaren, Emamabad, Sasang

3. More than 120 families - Sosara, Node Khanduz, Hajilar

One village was selected from each group randomly keeping pps (Probability Proportion to Size) technique in mind and thus three villages on periphery of forest sampled were Rahimabad, Azdaran and Sosara. The only one village inside the forest was also taken into sample. For the better estimation, all household/families of these villages were taken for interview.^{10,11}

Data and Analytical tool

1. First of all existing literature were reviewed in addition to study of Minoudasht Forestry Plan Booklet of Iran
2. Primary data were collected through administering pre-tested Questionnaire and information/observation sheet.

The Questionnaire was divided into two parts. The first part deals with the demographic features. Whereas the second part deals with the socio-economic part including resources for livestock feeding, kind of forest uses, house building materials, consumption pattern and dependence, kind of fuel and its use, reasons for forest destruction from villagers point of view, wood procurement/ collection by villagers and various other problems of agriculture and stock breeding, suggestions for improvement etc.

The analytical tool was basically a tabular analysis and percentage calculation followed by various kinds of diagrams.

Data so collected/ acquired got analysed using tabular analysis and pictorial approach (Histogram etc.) analysis and results so obtained got presented/inferred.

Findings

These findings are based on the study conducted in four villages namely Sosara, Azdaran, Rahimabad (periphery villages) and S.M. Hosein village (inside the forest). Objective-wise findings are listed.

I. Population demography and employment and socio-economic status :

These two sets of items were studied in detail and are presented as given below :

(a) Population and demography

It has been found that with the rise in population, there has been decline in the forest cover. In general, there are 61 to 74 males for 100 female and about 35% population is in age group of 15-34 years. The biological density was also calculated by use of the formula given below and it has been found that it varies between 150 to 500.

Biological density =

$$\frac{\text{Population (No.)}}{\text{Land under cultivation in hectare}} \times 100$$

The land holding has been found varying between 1.5 to 5 hectare per unit.

There has been migration on account of education, marriage (more true in case of women) and job seeking. Job seeking migration was seasonal as well as permanent. The permanent migration was basically a group migration. There was movement of fraction of the population inside the forest but it was for

the purpose of reducing the distance between residence and farm land.

Literacy rate is not very high (varies between 14 to 68 per cent/: Men are more literate (upto 86%) than women (upto 67%). The villagers of those villages (specially of Sosara) which are nearer to town are more literate. When we move our analysis from mere literacy to higher education, the percentage of educated population get declined. The percent of person with junior high school degree in S.M. Hosein village is 38.7% in Sosara 26%, in Azaderan 31.5% and in Rahimabad 20% whereas the percent of person with High School Certificate is 3.4%, 10.7%, 7.7% and zero in these villages respectively.

(b) Employment and Socio-economic Status

In the sampled villages, villagers in general have following four sets of activities:

- stock breeding
- Agriculture
- Both (Stock breeding and Agriculture)
- Service providing (as labourers, Mason Carpenter etc.)

Table 1 : Number of families practicing various sets of activities in sampled villages

Village name	Stock breeding	Agriculture	Agriculture and stock breeding	Service
S.M.Hosein	38	8	27	12
Sosara	16	86	10	46
Azadan	21	32	18	9
Rahimabad	31	8	7	3

All sampled farmers in these villages were engaged in third category that is stock breeding and agriculture both

It has been revealed that higher number of livestock means higher level of income for villagers. But this had increased the need of forage which led to excessive grazing in forests in spite of lot of checks/bans. It was because of the high prices of forage outside forest in

the area. The feeding material used by villagers are bran and beet, crop residues and forest based material.

As a policy sampled respondent opined that the "government should supply the required quantity of forage at low price to the stock breeders/villagers. This will facilitate the execution of plan of livestock exit from forest and accordingly, the pressure on forest will be

reduced. However, the successful execution of this plan (livestock exit from forest) depends upon the economic and social factors of the area.

Pasture of the area is of medium quality and with the onset of the summer/hot season, the vegetation dries gradually and stock breeders are faced with serious problems and they have to use forest grass for their animal.

Majority of the respondents' suggestion was for establishment of forage and livestock cooperative company without compromising the interest and needs of the villagers.

It has been revealed that the villagers avoid keeping of hybrid animal because of lack of knowledge about maintaining and benefits of these animals and also fear of disease transmission and lack of healthy place for keeping them and maintain.

The sample respondents were of the opinion that with proper education and adequate financial assistance in the form of loans and permanent supervision by veterinarian specialists of these livestock, the development of the people is possible, as the villages will be able to earn higher levels of income from the improved breed and thereby reduce their dependence on the forest.

Problems due to stock breeding and agriculture

In agriculture and stock breeding activities, in addition to climatic, topographic and soil problems, other factors are also responsible for low efficiency of agriculture. In Sosara 100% of the people believe that high costs of forage, manure and water scarcity and low area of farmlands are really the problem. 87% of persons have financial difficulties in replacing livestock with hybrid ones and 18.2% have problems in selling their products. In S.M. Hosein village, 100% of people believe that financial problems, high cost of forage and far distance of farms from the village are the main problems and 25% of persons have problems for selling their products. In Rahimabad village, 100% of villagers

believed that financial problems and lack of access to farm lands are the main problems; 74.8% of people believe high costs of forages and chemical fertilizers are the problems.

In Azadran village: 100% of persons believe that high costs of forage and chemical fertilizers are main problems and 32.8% mentioned that the far distance to farm lands and absence of proper roads are the main problems.

Handicraft Industries : In rural societies, handicraft arts are learned mainly by girls and women and they help to boost the family income. Creation of these industries is a reflection of various employment options and diversity in product range such as carpet weaving, durries weaving, sockets weaving and chador (veil) weaving.

Due to lack of craft union there is no reliable data on the subject and estimating production expenses of these products, marketing channels and market demand is very difficult to estimate, with a great accuracy.

Family income and expenses : The main source of income is farming, stock breeding and gardening; all family members play an important role in contributing towards the family income. Due to the presence of middlemen, in selling of their products, the people benefit less from the products sold. They receive only about US\$ 180-200 (per month) that is insufficient and inadequate to meet the various needs and day to day living expenses.

Silk worm rearing

Silk worm rearing means maintaining of silkworm. It consists of activities like feeding silkworm on mulberry leaves (moraceae), obtaining silk cocoon, drying cocoon, mating silk fly etc. The history of this activity shows its important role in villager's life. Silkworm rearing is a seasonal and short period activity that begins in April and ends in June (about 50 days). Villagers are dependent on traditional knowledge passed down the generations. The

necessary space includes room, stores, and stall. The used tools are very simple and all family members help together and women do the majority of work. Silkworm rearing is well established in Azadaran and S.M.Hosein villages and however it is not practiced in other villages due to lack of appropriate lands for planting mulberry trees.

By proper training of programs and promotional activities including subsidy for other villagers, may bring the desired adoption of this activity in other villages also.

II. Dependence on forest

(a) Forest as Livestock Forage Resources

After evaluation, it was found that in S.M.Hosein village 100% of villagers use bran & beet and plant forage for their animals, 85% people in this village use crop residues and 25% people in this village use forest grass. Hence, the priority in this village is to supply beet and bran, followed by crop residues and then, forest based raw material. In Sosara village 100% people use plant forage, crop residues, beet and bran and 12.1% use forest grass. In Azadaran village 100% people use plant forage, crop residues, beet bran and 16.2% use forest grass. In Rahimabad 100% people use beet and bran and crop residues and 95.2% use forest grass.

In view of the above, it is concluded that in majority of the sampled villages the dependence on forest is very high for live stock forage resources in terms of plant forage and forest grass.

(b) Use of forests surrounding the villages

Villagers have different usage of forest; some of which are fuel, raw material towards building houses, fencing, livestock feeding, medicinal purposes and recreational purposes.

In past years forest woods were used in the construction of buildings and houses. However, today one observes the use of substitutes and this has decreased the level of dependency of villagers on the surrounding

forests thereby also reducing the stress on these natural resources in the region.

In Sosara village: 100% of villagers use cement, sand, stone and brick. 83% also use wood in house building and fencing, 87% use Aluminium, 27% use Iron profiles, 97% use tin plate and Asbestos – cement plate (for roof).

In S.M.Hosein village : 86% people use cement, sand, stone and bricks 94% use wood for house and fencing, 32% use Aluminium, 7% use Iron profiles and 83% use tin plate and Asbestos – cement plates (for roof).

In Azdaran village : 67% people use cement, sand, stone and bricks 91% use wood for house and fencing, 25% use Aluminium, 7.8% use Iron profiles, 86.2% use tin plate and Asbestos – cement plates (for roof).

In Rahimabad village : 16.2% people use cement, sand, stone and bricks, 97.8% use wood for house and fencing, 9.2% use Aluminium, 2.8% use Iron profiles, and 32.8% use tin plate and asbestos – cement plates (for roof).

In recent years villagers meet their demands of their needed wood from town wood factories.

As mentioned in the online site of Golestan province natural resources management, no village is allowed to use wood, for construction of house and fuel. Most of the villagers in Sosara use fossil fuels (petroleum and Gas) to meeting their fuel energy requirements. Recently the gas piping is under construction and it will be ready for use very soon. Other villagers use woods and fossil fuels for heating their home. The evaluation shows that villagers believe that fossil fuels are very simple to use, however, the high costs of transportation is a limiting factor in the use of such fuels and hence they prefer to use forest woods. The proposed intervention should aim at providing facilities for transportation of fuels to village (free). The present quantity of wood

consumed in S.M.Hosein village is 420 m³/year, in Azadaran is 520 m³/year and in Rahimabad it is 800 m³/year.

In 2003, the national oil company of Iran had to establish distribution units for oil and gas in villages with more than 20 families (with cooperation of Forests and Rangelands Organization) within 4 years. The central bank of Iran also had to provide loans to villagers for establishing the bakery shops with fossil fuels and centers for selling petrol. Three years after the ratification of these rules only Sosara village (due to proximity to town) has gas piping systems and until execution of above rules, the foresters should not expect that people would not be dependent on the forest woods.

The study revealed that the villagers meet for their fuel needs through several ways such as dry woods, wind-fall down trees, and cutting trees etc.

In S.M.Hosein village, 100% of people said that they use dry woods, 97.2% also use wind thrown trees, and 28.2% cut trees. In Azadran village 100% of people said that they use dry woods, 87.2% also use wind thrown trees and 17.3% cut trees. In Rahimabad 100% of people said that they use dry woods, 62% also use wind thrown trees and 15.4% cut trees.

III. Possible ways out to improve the socio-economic status of the villagers and minimise the pressure on the adjacent forest cover

Respondents and other concerned were of the opinion that after studying the ecology of the area and possibilities of application of new technologies, following items of action shall improve the socio-economic status of villages as well as forest health

1. Maps providing of multi-criterion evaluation of land use

Many countries are using these maps for long time but it is not accomplished in Iran yet, and it is necessary to perform it as soon as possible.

2. Improvement of educational status in the region

The education facilities must be established in those villages and also roads must improve. Young students have to go every day to town for education and this caused to reduction of labour force in villages even during off hours. Also by teaching environmental subjects, the knowledge and interest of people must be increased for betterment of forest and environment.

3. Supplying basic needs of villagers and foresters

In recent years, establishment of health houses and health centres in villages has led to improvement of mortality and morbidity rate in the region; also training on new farming methods should be organized more vigorously by government which shall create revolution in villagers life; providing basic needs to villagers shall lead to a nice and better life and soliciting cooperation of villagers in governmental plans (such as Minoudasht forestry plan) will smoothen the implementation and its effectiveness.

4. Villager's participation

Participation of villagers and using them in performing plans will have a special effect on the management. Forests and pastures are the foundation of the forest management; the participation of people must be sought for this. Many plans due to its large volume and complication of work in the forests do not get success hence it must be done by villager's participation. Before the plans, villager's opinion and their experiences must be used; in other words, the socio-economic factors, needs, villager's interest and their customs must be considered in designing the plans.

5. Improvement of job status

Employment status is one of the important indices in social and economical development we can propose for following items for improvement on this count; mechanization of agriculture and stock

breeding, establishing production factories and co-operative/companies, apiculture development, poultry breeding development, medicinal plantation, development of rural handicrafts like durries weaving, rug weaving, application of active labour forces of villages for performing of Minoudasht Forestry Plan.

6. Improvement of land use pattern and land management pattern

These areas must be improved by following activities:

Providing a proper strategy for improvement of land use pattern and its management, planting proper trees in lands with sharp steepness, planting fast growing species with high yield wood to meet villagers need, integrated planting, range management, forestry plans, planting flowery species for apiculture, planting mulberry trees for silk worm breeding etc.

7. Change of fuel use pattern

Since the forest woods are the main resource of the fuel for villagers people will continue to take it from forest (legally or illegally), some arrangements must be considered for solving problem for this reason, the national Iranian oil company in 2003 had to establish distribution units for gas and oil with cooperation of forest organization, to supply fossil fuels with a proper price for villagers and also the central bank of Iran had to grant loans to establishment of bakery shops with fossil fuels in villages and also distribution units of oil.

8. Breeding and optimization of livestock breeding management

Changing traditional methods to industrial methods, using improved breeding methods, forage plating development, pest control and prevention of livestock diseases, planning nutrition diets for livestock, establishment of milk collection stations in villages, establishing dairy industries etc are some of the ways of improvement on this count.

9. Financial supports

Since the families under study have not a proper financial status and mostly are low-income group, the banks must help them for mechanization of their activities by granting loan to them.

10. Establishing co-operative/ companies for forest utilization

Foresters must participate in such companies for performing of forestry plans. Performing of forestry plans may be granted to these companies and foresters may act over there as the performer in these plans. After that, forester will not feel himself or herself apart from forests raised/ supported by cooperatives/ companies.

11. Working stockbreeders in forestry affairs

In this plan, all labour force that needed in an industrial forestry center (such as cutting, transport, planting, saplings, sawing, box making, drying woods, making door and windows and tables etc.) are calculated and stock breeders in villages are used in the form of permanent worker in these centers.

12. Establishing wood industry factories

For reduction of transport expenses and better management, it is better to establish wood factories near forests. So, villagers can work in such factories (factory of chipboard, fiber) and get employment without going to towns.

13. Education of villagers

In addition to fighting against illiteracy and health, related organizations must familiarize villagers with modern agriculture and stock breeding techniques by training classes. Elementary education is needed to explain villagers the Social, economical and basic roles of the forest.

14. Identifying forest border with farmlands

It is necessary to identify forest boarders with farmlands for preventing the

interventions of villagers to forest and it must be done by forest pastures organization.

15. Establishing the stock breeding cooperative/ companies
16. Spending some part of incomes from Minoudasht forestry plan for improvement of villager's life and civil tasks:
17. Establishing a meaningful cultural and executive relationship with modern developed countries: using experiences of developed countries is very useful for performing forestry plans in a better way. Social – economical problems of foresters may be addressed by use of such relations with the developed countries.
18. Arrangement to ensure sustainable development and improvement of quality of crops according to world standards, is necessary for marketing throughout the world.
19. Reinforcing the management tasks, supervision and control for prevention of forest destruction, farm lands conservation and identifying potential fertile lands.
20. Continuous supervision on building constructions in villages to mitigate natural disaster.

CONCLUSION

1. It was found that the land holding per household is not high (1.5 to 5 hect.)
2. Male female ratio is in favour of female
3. Major source of livelihood is agriculture and stock breeding
4. High price of fodder has made the grazing /lopping a common phenomenon and thus there is rise in pressure on forest for fodder, besides other uses – fuel wood, raw material towards building houses, fencing, medicinal items etc.
5. It was also found that with the rise in population, area under forest has declined.
6. Major suggested ways to improve the socio-economic health of the people and also the forest conditions, were

improvement in educational status, ensuring the fulfilment of basic needs of forest dwellers/villages, villagers' participation in planning, augmentation and creation of earning opportunities, cooperative approach to the problem and changes in fuel consumption pattern.

Policy Implications

1. Government should develop a mechanism of active participation of forest dwellers not only in planning but also in execution. It should also include educating the people.
2. Financial and other kinds of support through cooperative mechanism may be ensured so that forest dwellers not only meet their basic needs but also grow upward.
3. Job and or business opportunities be created alongwith the alternative sources of fodder, house building material, fuelwood etc. so that their dependence on forest could decline on one hand while on the other they find their future in upcoming job and business opportunities.

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