

## THE ROLE OF RURAL WOMEN IN NATURAL RESOURCE MANAGEMENT IN PAKISTAN

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### **Abstract**

*Women, particularly those living in rural areas Pakistan, play a major role in managing natural resources such as forests, water, land and wildlife. They utilize and conserve these resources to supply basic needs for their families. Therefore conservation and sustainability of natural resources in rural areas cannot be achieved without the involvement and training of women. The women of rural Pakistan needs to be educated on the values, management and sustainability of natural resources as alternative sources of livelihood, so that they can play a significant role in reducing poverty and managing natural resources in a sustainable manner. But to have success, they must not only be appreciated as invisible land managers, but must benefit from relevant incentives in their cultural roles.*

*This paper examines the roles of women in natural resource conservation, their role in agriculture, land, water supply, forestry, the collection and use of fuel wood and livestock. It will also examine, the research gaps existing and why conservation and sustainability will only succeed if government and nongovernmental conservation bodies targeting rural women.*

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### **Introduction**

It is common knowledge in rural Pakistan that women (and not men) are indeed the (invisible) managers of natural resources. Vandana Shiva (1989) has called women "the traditional natural scientist" "this is in recognition of their role as manager of natural resources. These resources include land, water, forests and wildlife. Most rural women 60% are poor (ESCAP, 1997) and the

Seventh Plan states that only 7.3% of rural women are literate\*. According to the 1998 Census the literacy rate among rural women in the Punjab was 9.4% in Sindh 5.2% in the NWFP 3.8% and in Baluchistan only 1.8%. Most of them do not hold any monthly paying job or any steady income and therefore are commonly referred to as housewives. But these women are great sustainers of rural micro-economic activities.

However nowhere is their impact and activities more significant as their indigenous knowledge of, and management of natural resources such as land, water, forests and wildlife. They are crucial because their traditional gender roles bring them in direct contact with these natural resources, and their survival and that of their families depend directly in exploiting and harnessing supplies from these natural resources.

Too many poor Pakistani rural farmers, especially women, are sustained by nature because they use the natural resources to feed their families. This sustainability is crucial to them if they have to sustain livelihoods off these resources. The natural linkage that has historically existed between nature and women has been gravely disturbed by the development policies that are tied to market economies, and which measure success in terms of growth in commodity production and consumption. (DAWN, 1998) Thus when the world environmental protection and conservation policies advocate for protection without any form of use, while ignoring rural women, they become the greatest victims of such a policy.

Women constitute a large percentage (over half) of the total rural population. Women are socially more burdened in rural Pakistan. Their activities range from family economic activities through cotton picking, producing handicrafts, processing food surpluses, in addition to their normal chores of cooking, taking care of children, elderly and disabled, fetching water and fuel, cleaning and maintaining of house as well as some of its

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\* Economic Survey (1988-89)

construction as recorded by Klein and Nestvogel. An (ESCAP, 1997) survey revealed that a rural woman works 12 to 15 hours of a day on various economic activities and household activity.

They are also a more appropriate group to target for cultural and social changes. Their activities in development and family care put them in the central position regarding impacts to land and other natural resources. Impact on environment is a direct consequence of economic and social factors. Chief of these factors is population size, and its growth rate. Land, forests and pastures have been degraded, destruction and desertification of forests, riparian habitats, and rangelands are being denuded and other socially undesirable areas arise mostly from increase of population. To be able to control population, improve rural development, and to protect natural resources, the role of women is crucial.

According to 1998 census data, rural Pakistan is the area, with the highest population growth rates, 51.12% rural and 48.88% urban (Khalida Jamali, 2001) while the natural resources {Wildlife, Forests, Wetlands, Land, Water and fisheries} are decreasing. This paper will discuss the role of women and their impact on some of these critical natural resources. This information is important for decisions on which gender is the relevant target group for education and mobilization concerning rural environmental issues. Such knowledge is also important for national planning and policy formulations concerning the use of land and natural resources in the country.

### **Women as Land Managers**

Land provides many basic needs in rural societies, the main one being is food. The main activity of rural women is in production of food for their families. In all Pakistan cultures, when one talks of food, whether in production, processing or marketing, they have in mind these activities as cultural roles of women, in the writing of Ester Boserup (1989) it is argued that it was 'woman the gatherer' who was a source of sustainable food supply and not 'man, the hunter'. On most farms in rural Pakistan, you will find

women providing over 80% of labor directly in food production, sowing, transplanting, weeding and harvesting as well as post-harvest operations such as threshing, winnowing, drying, grinding, husking and storage, (Including mud bins for storage)<sup>†</sup>. This activity is major among other chores like fuel- wood collection, pole-wood for construction, fetching of water for domestic use, cooking and feeding of the family, and treatment of common rural ailments. (Baluch, 1985) wrote, women dominate food processing thereby contributing to diversity in diet, supplying important vitamins and minerals and reducing food losses, e.g. Sindhi women indigenously practice drying vegetables and preparing different kind of pickles.

Women are key players in the agricultural sector. Almost 79.4% of rural women are active in this sector as stated in the 1991-92 'Labour Force Survey'. They are actively engaged in the production of crops and vegetables, the cotton crop, which accounts for half of the export earnings of the country, is heavily dependent on female labor force. Rural women in Pakistan exclusively do the cotton picking<sup>‡</sup>. A survey conducted by the Barani Agriculture Research and Development in five districts of North West Frontier Province of Pakistan shows that 82% of women participate in agricultural work. They spend 45% of their time on agricultural activities and are responsible for 25% of the production of major crops and 30% for food

Women therefore come directly in contact with land in their effort to produce food. When, soils do not yield enough crops because of exhaustion, it is women to deal with modification of farming practices like provision of local manure to replenish the soil. They take care of farmyard manure collection and its application, which has important consequences in soil fertility women possess knowledge of herbs for both general and reproductive health, food and fodder. They also know the location

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<sup>†</sup> Khalida Jamali (2001)p.107

<sup>‡</sup> Cited in Akmal Kamal, Poverty Alleviation in Pakistan. Vengaurd Books, 1994 p.17

of pastures and water sources, etc (GOP, 1995). When there is destruction of soil cover that causes soil erosion, except where there is government paid work its usually women who do the terracing or develop other strategies be they enlightened or naïve. They are left with the responsibility of taking care of degraded land holdings when men migrate from the villages (GOP, 1995)

This discussion reveals that conservation and wise use of rural land is mostly the domain of women. Their traditional activities skills and knowledge are crucial in understanding why lands deteriorate or remain viable, while it is becoming increasingly important to protect soils from erosion, and degradation. A lot of natural biodiversity and change of ecologies also result when land is misused. Of main concern are the spread of desertification and loss of biodiversity because of intensive, indiscriminate and careless use of land.

Many women of the world have sustainably used their land, but the increase of rural population and the competition of market economies on the global scene is compromising this sustainability. It is crucial that women are taught to use farming and other compatible land use approaches for biodiversity and ecological conservation. The common problems related to use of land in the face of increasing human population and diminishing land resources, and free market economy competition, are deforestation, water logging, soil degradation and water pollution.

One of the greatest factors working against women is land tenure system. In many cultures, land is passed on to men and not women. Women lack ownership of productive resources. Despite women's legal rights to own and inherit property from their families, there are very few women who have access and control over these resources. A micro level survey of 1,000 rural households conducted in 1995 in Punjab found that only 36 women owned land in their own name, while only 9 of them had control over it. It is often noted that when women have access to land, they often depend on the most fragile areas and resources, when

competition for land increases, often their access is at risk<sup>§</sup>. According to an FAO (2002) study, land degradation (deforestation and desertification) impacts harder on women, since they have to spend more time in finding fuel wood, fodder and water.

Most lands are traditionally registered to men and women can do nothing in increasing fragmentation for sale or other activities. Even though they are the ones that deal with production off the land, its fate is entirely a male issue. There are cases where subsistence food crops are diminishing and major cash crops increasing. Women are involved mostly in provision of food, and when little and poor land is available for subsistence crops, they are forced to work more harder or go long distances to reach scattered parcels of land to farm for domestic food crop use. Therefore land tenure systems and legal structures actually marginalize women when in fact they are the most affected and real invisible land managers in Pakistan.

From natural resource conservation point of view, it is increasingly becoming important to allow conservation of natural resources such as forests and livestock as a form of land use, looking after cattle and poultry has always been a woman task in rural Pakistan. The current danger is over emphasis of agriculture over other forms of land use. The result has been an ever-increasing clearance of forests and other natural vegetation habitats for agriculture including watersheds, wetland virgin forests and catchment areas all over the country are being cleared to produce domestic or cash crops while wetlands have fallen prey as vegetable production areas in the dry seasons.

With Pakistan being a signatory to international treaties committing her to conservation of environment and natural resources, there is a great need to devise practical incentives that

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<sup>§</sup> Ministry of Women Division (MWD). "Pakistan National Report" submitted to the 4<sup>th</sup> World Conference on Women; Beijing, 1995

are aimed at women, particularly in meeting their gender roles and alleviating poverty, so that they can accept and appreciate setting apart land for forests, livestock, wildlife and others as an important land use. There is need for focused campaign and help for women with the aim of legitimizing conservation as a form of land use in rural areas. This is the only way conservation will be possible. Further, there is need to encourage land use practices that are compatible with conservation, such as agro-forestry and proper farming practices and land ethics.

### **Women as water managers**

Issues concerning management and conservation of water resources are of great importance in Pakistan now. With increasing human pressure on land, riparian areas and wetlands, areas, which were normally sparsely populated, are now settled. There is therefore an increasing concern on impacts particularly on current and future provision of clean water as well as of conservation of wetlands as habitats for wetland related biodiversity.

Women are the main collectors and users of water, women in Sindh walk up to ten miles to fetch water (Mumtaz, 1993) They have to decide where to collect water, how to draw, transport and store it, how much water to draw, how many sources of water to exploit and for what purposes {drinking, kitchen and other domestic use}. In some cases where women can afford tanks, rainwater becomes a major source for drinking and other domestic use.

In most areas, especially dry areas, women still depend on wells, springs, streams and rivers for water supply. In this case, practices that comprise water from streams, underground and rivers directly affect the welfare of women. To have a steady supply of water in streams and rivers, all catchment and riparian vegetations need to be conserved. This ensures that the hydrological cycle to continue, with feedbacks that involve evaporation, condensation, rain and runoffs. Stream and river sources should be conserved, as would be a cold source. This

means that all agricultural practices {as they involve deforestation and replacement of natural vegetation} needs to be discouraged in riparian and catchment areas. Draining of wetlands or farming them for agricultural practices {such as planting of rice} should be discouraged if they will affect water quality, quantity, distribution and supply.

Women should be educated in the importance of conserving wetlands, riparian zones and catchment areas to ensure clean and reliable water supply for their current domestic use and future supplies. With increasing number of women groups and their unique self-help projects, clean water availability and access is becoming the biggest item on women related-projects.

### **Women as foresters**

Forests provide the vital three F's for women Food-Fuel and Fodder. Rural women in Pakistan actively use forests and the surrounding areas as a source of items essential for survival of their households. Fetching water and collecting fuel wood for cooking and fodder for domestic animals come in daily routine work of rural Pakistani women (Mumtaz, 1993). Apart from maintaining atmospheric balance, protection and maintenance of watersheds, protection of soils and water, and in providing habitats for endemic and rare forest related biodiversity, forests are important to women particularly in supplying fuel wood. Women use forests to supplement fuel and food sources, they help other family members in home gardens and rearing livestock. The latter involve gathering fodder from nearby areas and stall-feeding animals, grazing of animals is a very important component of the daily work life of rural women (PARC, 1998). Women also collect firewood and cow dung from surrounding grazing area. Forests are also used for cultural purpose such as in provision of medicinal plants, which cater for most rural healthcare. Village women in the Kanak Valley, Baluchistan can readily identify 35 medicinal plants they commonly use. They say that the plants "grow with no

masters" a reference to the fact that the plants have no husbands to boss them around\*\*

Many women are involved in the raising of trees on farmlands and around their houses to meet basic needs. Socio-cultural attitudes often do not permit open involvement of women in agro-forestry activities but due to socio-cultural and economic changes over the years, more and more women are taking active part in the management of their wood/farm resources.

Shrinking of mangrove stands in the Indus Delta caused by reduced fresh water into the delta has made coastal women walk longer for the collection of fuel wood for the household and fodder for livestock. The grassy mud flats in between forested areas, are also used for grazing of bufaloes and cattle, this is a popular use. Women care for livestock and the deterioration of these forests has meant that women spend time elsewhere looking for fodder or grazing on roadsides. Therefore, women have used forest products intimately and their conservation is tightly linked with their activities and gender roles. (Rodda, 1991) states "Due to diminishing fuel wood sources, cooking is increasingly done with crop residue or other alternatives such as cow dung".

Heavy grazing over vast areas of rangelands has gradually put intolerable pressures on land, vegetation and its inhabitants, such as wild life, farmed livestock and pastoral communities (Aleem, 1980) in the semi nomadic communities, women often look after the herds. This has led to an expansion of dry land farming on marginal lands and cutting of shrubs and trees for domestic fuel consumption (Umrani et al., 1995) As a result, more palatable grasses, legumes, herbs, shrubs and trees have been destroyed and dominated by unpalatable low quality vegetation, (Alvi and Sharif 1995), this destruction has a direct impact on the rural women as they devote more time on the marginal lands and suffer the loss of their livestock due to inadequate forage during dry period, combined with drought years. Preliminary work on the

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\*\* Village Women in Baluchistan: UNEP 225, Press Release  
[www.un.org/news/press/doc/2004unep225.doc.htm](http://www.un.org/news/press/doc/2004unep225.doc.htm)

Pakistan National Conservation Strategy has revealed that with only 4.5% land under forests, the rapid rate of deforestation can have far reaching consequences on women, as they are the primary users of natural resources

Since Indus Delta mangrove forests hold some of the world's largest and unique biological Resources, "initially regarded as useless, mangrove have recently emerged as essential eco systems for coastal areas" they are of great concern and interest to conservation organizations and governments. "One of the largest mangrove forests in the arid areas of the world this national heritage is now quickly disappearing" (Saifullah, 1997) and forest biodiversity seriously threatened. The close association of women and forests as rural managers and users has brought women in the forefront of mangrove forest conservation. Organized women groups are now fighting against deforestation especially where their users rights are threatened. Women are also becoming very active in a forestation through social forestry (forest rehabilitation) and traditional farming is now being modified to incorporate agro-forestry in an effort to bring resources (such as fuel wood) out of the forest to the farms

### **Women as wildlife managers**

Wildlife is a national heritage of immense economic, cultural, educational, ecological, scientific and ethical values. Most rural women in Pakistan have used and conserved on subsistence basis, some of the wildlife resources. With the banning of hunting in 1980, most women have clashed with law and enforcement organs when they have attempted to use wildlife resources on small consumptive areas for their traditional grazing which have basically been carved from what used to be agricultural and pastoral native lands Wild life – Livestock conflicts are primarily focused on access to grazing and water resources. However, competition for scarce grazing and water resources is increasing and the potential for conflicts between wildlife conservationist and livestock owners, who many of them are women, is growing as

pastoralists and agro-pastoralist move into new areas and / or live in the vicinity of protected areas.

In the Khunjerab National Park, the government backed out of its commitments to pay compensation to the pastoralists, starting in a long lasting conflict of local communities and park management. Wild life bore the brunt of the damage; several pastures including a lambing ground were overgrazed (Salman Rashid, 1998). The ban on hunting and the costs of conservation (such as destruction of crops, property and even human life) has intensified human-wildlife conflicts all over Pakistan. When lives are lost, crops raided, property destroyed, women, who form the majority of rural population, are the greatest victims.

In the face of diminishing land, increasing human populations surrounding conservation areas, such conflicts are bound to increase, but there are both challenges and opportunities here. There have been innovations such as national compensation programs for loss of life and damage of property and crops but have been discontinued because of abuse and inefficiency in reducing these conflicts. Currently there are innovations that involve benefit {such as tourism revenue and related enterprenuering or a share of the Trophy hunting} and resource {such as fuel wood, wild crops} sharing and it is still too early to know how 'this' will turn out. There are emerging wildlife associations based at community level in which local communities are being encouraged to benefit actively from wildlife resources particularly in non-consumptive ways.

Making sure that local people benefit {by provision of financial and development incentives}, and empowering them to evolve organizational structures that will encourage sustainable benefits from conservation of wildlife resources will be crucial for the future of wildlife in Sindh. This is even more crucial given that most of {over 75%} wildlife in Sindh occurs outside conservation areas and on private land. Most of migratory pathways and dispersal areas (especially in Baluchistan and Sindh) are being

engulfed in settlements and agriculture. This may threaten wildlife survival and ecologies and it may be crucial for women to play a conservation role, but only in a framework of incentives and provision of basic family needs to which they are obligated to. Conservation of rare, threatened, endangered and endemic species and their habitats is of national and international concern, and the role of women in this conservation exercise cannot be over-emphasized.

### **Research needs and approaches**

A number of research needs related to the role of women in rural natural resource conservation are limitless but a few crucial ones have been identified as follows:

To quantify and evaluate the role of rural women in socio-economic activities in homes and rural development. To find the relative contribution of women and men in rural home economic activities, and their involvement in rural development activities such as fund raisings for small scale income generating projects and other projects that improve rural family life.

To quantify and evaluate the impacts of women's socio-economic activities on natural resources (land, water, wetlands, forests and wildlife) and how this can be ameliorated. Since their traditional activities bring them into daily interaction with natural resources, their impacts, attitudes and belief on the management, exploitation and sustainability of natural resource is critical for resource use and sustainability.

To quantify the degree of success in the way women run families and rural development and their potential contribution in changing and influencing rural socio-economic progress, especially conservation of land and natural resources; reducing the human rural to urban migration of the youth in search for jobs instead of exploiting rural opportunities as well as in controlling rural explosion (increase) of human population.

To quantify what resources are used, for what purposes they are used, the rate of resource use, the rate of renewal of the resources, the exploiting rural population, the rate of that rural population increase, projections of stability and dynamics of resource use, and the questions concerning biodiversity conservation while still catering for human resource-based use.

**These research needs are multi-disciplinary in nature and can involve both biological inventories of resources and sociological study**

*Public participatory appraisal:* The involvement of interested and affected parties in these researches is crucial if the findings are used to influence their way of life or any policy related to natural resource use. This can be ideal during the initial stages {Reconnaissance period}. Key rural development and economic indicators can then be decided upon {such as small-scale trade, subsistence farming, housing and infrastructure, basic life support supplies, etc}. Once this is in place, informal discussions and interviews can be held with women and men to identify resources and their uses, investments in economic and social activities, gender roles in resource management and conservation, gender bias in responsibilities, opportunities and problems. Transecting, mapping, ranking, interviews and triangulation methods can be used.

*Household interviews:* This can be done both formally and informally with selected household heads {women or men or both} to discuss key issues related to gender, rural development and interaction with natural resources. Such interviews can also be held with key informants {such as provincial administration, government officials, local government officials, elders etc}

Questionnaires can be designed to isolate and identify key necessary variables that can supply information consistent with the objectives of the research needs. Randomization in distribution to ensure wide spread distribution of questions in primary research area can be done and follow-ups later. In some cases, visits can be done and a member of the research team would actually ask and record answers.

*Field observations and measurements:* Resource use, land fragmentation, woodlot plantations, water sources and such measurable parameters can be sampled or counted in standard

statistical procedures, Case studies in which detailed sampling and measurement of the intensity and extend of resource use and impacts can be done by field observations and measurements.

### **Conclusion**

Women in rural areas are more linked with natural resource use and conservation than men. Their traditional stereotyped gender roles bring them in daily contact with natural resources such as land, water, forest and wildlife. They have to use these resources because they are often poor and their livelihood most depends on these resources. When these resources are exploited and ruined, women suffer most. If they are wisely used sustainably women benefit most. Most women want to learn and to be recognized for what they really are managers of natural resources.

Any government and non –government efforts to conserve should therefore appreciate and recognize the central role of women as they have diverse indigenous knowledge in the use and exploitation of natural resources whether it is to provide food, shelter, traditional medicines or for other purposes. They are therefore an appropriate target group if wildlife will persist in dispersal areas, if mangrove forests and other natural forest parches are to remain un cleared in favor of agriculture, if watersheds and catchments are to be conserved for adequate provision of clean water, if wetlands are to be considered useful for ecological processes and biodiversity and not considered as waste lands, and if land as a resource is to be used sustainably and not turned into degraded wasteland.

The choice to involve women is a choice for sustainability, it's a choice that will empower rather than increase conflicts over limited highly needed natural resources, it's a choice that will lead to conservation of natural resources being lost to consumptive and exploitative land use alternatives. The basis is to allow traditional use and benefit, yet elicit responsibility with such rights and

privileges so that at the end, benefits are close linked with conservation responsibilities.

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