

TRENDS IN FOREST OWNERSHIP, FOREST RESOURCES TENURE AND INSTITUTIONAL ARRANGEMENTS: ARE THEY CONTRIBUTING TO BETTER FOREST MANAGEMENT AND POVERTY REDUCTION?

A CASE STUDY FROM THE ISLAMIC REPUBLIC OF IRAN

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Prepared for
Food and Agriculture Organization of the United Nations



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Acronyms

CPPNF	Comprehensive Plan for Preserving Northern Forests
CPPZF	Comprehensive Plan for Preserving Zagros Forests
DOE	Department of the Environment
FDC	forest dwellers' cooperative
FLL	Forest Local Livelihood
FLR	Forest Lands and Resources
FMP	forest management plan
FNL	Forest Nationalization Law
FPA	forestry plan administrator
FRWO	Forest, Rangeland and Watershed Organization
GEF	Global Environment Facility
NGO	non-governmental organization
NRO	natural resource office
NWFP	non-wood forest product
SFM	sustainable forest management
SGP	Small Grant Programme
SPUC	secondary products utilization cooperative
TOR	Terms of Reference
UNDP	United Nations Development Programme

Summary

Iran has a long history of utilizing natural resources, stretching back for about 10 000 years. Early human societies in the country (particularly in western parts) generated major ancient civilizations, based mainly on the use of natural ecosystems. As the population grew, societies became conscious of their natural ecosystems, including forests, and started to explore sustainable and long-term ways of using resources. This led to the development of different natural resource management and forest tenure systems in different areas.

Natural resource tenure systems, especially those for forests, have been affected by periodic changes in basic policies and management systems. This case study is part of an FAO study of central Asia. It examines changes in forest tenure, management and institutional arrangements in Iran, and the potential effects of these on sustainable forest management (SFM) and poverty alleviation.

After a long period of diversified forest ownership and tenure (e.g., feudalism and forms of private ownership), forest ownership in Iran was transferred to the government following enactment of the Forest Nationalization Law (FNL) in 1963.⁶

Ownership of major forest areas, such as in northern and western Iran, is disputed/claimed by local communities that still hold traditional forest title deeds. This has created challenges for central government, as the official owner of forests, and local communities, as potential forest user groups. These challenges are reviewed in this case study. Most inland forests are managed and monitored by the government, and the case study reviews the challenges, advantages and weaknesses of this, particularly in relation to local livelihoods. Existing forest tenure types – local forest management cooperatives, private companies and long-standing customary resource management – are discussed and a set of proposals put forward.

Key words: forest tenure, forest ownership, Islamic Republic of Iran, poverty reduction, sustainable forest management.

⁶ Information on national forest legislation is available at www.frw.org.ir.

Introduction

ISLAMIC REPUBLIC OF IRAN

Iran covers approximately 164 million ha in central Asia. Most of the country is mountainous with a central plateau comprising steppes, semi-steppes and saline deserts.

In the northern Alborz mountains and the southern Caspian Sea area of northern Iran, original temperate forest cover constitutes a valuable natural heritage, featuring rich biodiversity and genetic variation. The western part of the country, in the Zagros Mountains, also has long-established forests. This region's meteorological and geographic conditions result in more diverse and denser forest stands in northern and western zones, with sparse stands in the south and east.

The Forest, Rangeland and Watershed Organization (FRWO) is the sole implementing agency in charge of planning and managing natural resources, including forests, across Iran. FRWO has a wide network of provincial and district offices in close contact with its headquarters in Tehran. FRWO has five departments for:

- range and soil;
- forestry;
- watershed management;
- conservation and land affairs;
- planning and logistics.

OBJECTIVE

This case study investigates trends and changes in forest tenure and management, including the relevant policies and laws, over the last 20 years. It assesses the outcomes of these in terms of poverty alleviation and livelihood improvements for forest dwellers in a diverse range of forest ecosystems, particularly in northern and western Iran. It reviews existing forest tenure types, and possible tenure rights for owners based on existing natural resource laws. It outlines the management rules implemented for each tenure system and reviews forest management approaches as they apply, or could apply, to different forest tenure types. It defines official agreements, such as between private landowners and government wood industries, and owner-user rules, and investigates changes in official laws and arrangements.

Carrying out such a study in Iran is complicated by country-specific features of the forest tenure and management systems. One complication is how to define existing traditional forest management, such as in the Zagros forests of western Iran, where tribal forestry implementing silvopastoral livestock grazing rotations in the informally divided Lor-dominated districts (Adeli, 2006) exists side-by-side with conventional forestry based on pollarding in Kurd-dominated districts (Ghazanfari, 2003). Officially, all of these forest lands and resources are owned by the government.

Another obstacle in preparing the study was the different definitions of forest applied nationally, by FRWO, and internationally, by FAO. For instance, vast areas of Khalidj-o-Omanian (near the Persian Gulf in southern Iran) and Iran-o-Touranian (in central, eastern and southeastern Iran) are dominated by xerophyte woody stands. According to international definitions, these are not considered forests because they have less than 10 percent tree cover, even though they are the remainders of dense old-growth stands that formerly covered the region (Yachkaschi, 2003). If such areas are recognized as forest they risk further degradation and conversion to other land uses, which would run counter to forest policy.

The objectives of this case study are to:

- identify the potential advantages/disadvantages of existing forest tenure systems and forest laws, and propose appropriate and tested management activities;
- make use of existing strong points and capacities for the better management of forests and forest communities to alleviate poverty and improve livelihoods.

METHODOLOGY

The case study is based on analysis of forest tenure and management information gathered by official organizations. As most forest resources in Iran are State-owned, forest tenure data were collected from government management sections. The management units of FRWO provided most of the data, with additional inputs from the Department of the Environment (DOE), forest use/management companies in the private and cooperative sectors, and environmental non-governmental organizations (NGOs).

A wide range of viewpoints were collected, including those of forest communities, cooperatives, government forest use companies, provincial natural resource offices (NROs), research institutes and academic natural resource faculties. Natural resource stakeholders, including representatives of the data sources, attended a validation workshop held by the study team.

Forest resources and tenure

FORESTS IN IRAN

Northern (Caspian) forests

Iran's Caspian forests are categorized as temperate deciduous forests with small patches of Mediterranean woody cover types (e.g., sparse *Cupressus sempervirens* stands). Temperate broadleaves such as *Quercus castaneifolia*, *Fagus orientalis*, *Carpinus betulus* and *Parrotia persica* are widely established within these forests. The Caspian forests are well-stocked and rich in tree biodiversity, containing more than 80 native woody tree and shrub species.

The unique Arasbaran forests occupy approximately 160 000 ha of northwestern Iran. They are categorized as mountainous mixed broadleaf forests, in transition between the deciduous Caspian forests and the semi-Mediterranean Zagros forests. There is no systematic forest harvesting in this area, which DOE administers as the Man and Biosphere Forest Reserve (DOE, 2003).

Western (Zagros) forests

The forests of Zagros extend from western Azerbaijan province to the southern province of Fars. This forest area is reported to have covered more than 10 million ha in the past, but has decreased significantly to its current 5 million ha following long-term exploitation. In the Zagros region, the oaks (*Quercus persica*, *Q. infectoria* and *Q. libani*) are the main tree species, forming pure and mixed stands with other woody species. Most Zagros forest is now semi-degraded and coppiced, after intensive utilization and overgrazing by cattle (Jazirei and Ebrahimi, 2003).

Iran-o-Touranian vegetation

Iran's central plateau consists mainly of semi-arid and arid vegetation covers, such as steppes with *Tamarix* spp., *Haloxylon* sp., *Artemisia* sp. and other woody species (e.g., *Pistacia* sp., *Amygdalus* sp. and *Juniperus* sp.). Sparse stands of *Pistacia* sp., *Tamarix* spp. and other species make up the xerophyte cover of some areas (e.g., southwestern Iran).

Khalidj-o-Omanian vegetation

Sparse, dense and semi-dense mangrove stands form unique covers along the banks of the Persian Gulf in Khuzistan, Bushehr, Hormozgan and Sistan-o-Baluchistan provinces of southern Iran. Major species include *Avicenia mariana* and *Rhizophora mucronata*. In other areas, vegetation is dominated by native woody species such as *Ziziphus spina-christii*, *Prosopis stephaniana* and *Acacia arabica*.

OWNERSHIP FIGURES

Forest ownership in Iran was transferred to the government following enactment of the Forest Nationalization Law (FNL) in 1963. Most forest areas are now State-owned, except for a few plantations on private land. The State's role in forest management has been defined as "balancing the use of forest resources for the entire nation as potential stakeholders".

State ownership has helped to regulate forest utilization in the Caspian forests, where timber can be extracted according to approved forest management plans (FMPs). The State's most significant contribution to forests has been in preventing further forest degradation resulting from such activities as:

- extensive conversion of forest land to other land uses;
- deforestation or forest degradation involving loss of forest area or biodiversity;
- illegal logging.

FNL organizes and regulates industrial forest exploitation in northern Iran. FRWO has implemented activities to prevent illegal logging in Caspian forests, and (directly or indirectly) prepares FMPs for northern Iran. The plans are then implemented either by FRWO or by cooperatives or private entities (concessions) (Hess and Buys, 2007).

The Forest and Rangelands Protection and Utilization Law (Article 58) makes it easier to implement FMPs through government companies and forest dwellers' cooperatives (FDCs) than through the usual system of bids from the private sector with FRWO receiving shares of the royalties from timber utilization. This has encouraged the assignment of FMPs to local cooperatives, under contracts that stipulate the royalties to be paid to the State.

In western Iran (Zagros) informal forest ownership was the main tenure system until the National Land Reform and FNL of 1963, when existing deeds suddenly became invalid. This initially led to increased deforestation, land-use conversion and disputes between the government and the communities that had lost their long-established ownership of forest resources and land. These conflicts have decreased in recent years, partly as a result of greater community participation in the preparation of FMPs. For the last two decades, universities have also participated in developing FMPs for Zagros.

Government ownership has promoted forest conservation in southern Khalidj-o-Omanian and central Iran-o-Touranian. For example, areas of gallery forests in the Karkhe and Dez basins of Khuzistan province and of mangrove in southern Iran are now protected by legislation decreeing that 10 percent of inland forest areas should be protected under DOE administration (DOE, 2003).

Over the 45 years of FMP implementation in northern Iran, approximately 1.4 million ha of planned forest land has been subject to at least one revision.⁷ As a result, although forest management rights belong to the State, FRWO reports that approximately 1 million ha of forest resources have been assigned to private, cooperative and government companies (Anonymous, 2004)

State forest ownership rights are more complicated in Zagros, where most forest dwellers are tribal communities and informal forest tenure systems are still applied. These systems, together with the needs of local communities, are a potential source of resistance to official State policies for forest management. In some areas, this resistance has decreased as a result of the State's increased attention to local communities' rights (guided mainly by FNL) through participatory FMPs and incentives such as limited grazing permits, fuel supplies, permission to use non-wood forest products (NWFPs), welfare facilities and primary/secondary schools in rural and tribal communities (Anonymous, 2004).

In other parts of the country, forest tenure rights have received little attention, owing to a lack of up-to-date data at FRWO. There are exceptions to this, however, such as official recognition of local communities' rights to shrimp culture in southern Iran (the native habitat of mangroves).

State ownership of forest resources and land incurs massive forest management costs for the government. Between 1960 and 2000, for example, the State invested 602.500 billion rials (approximately US\$670 million) in northern Iran, including the costs of employing experts for 178 570 working days and technical staff for 357 000 (Anonymous, 2004).

Over the last decade, the gradual shift of FMPs towards greater involvement of local communities in forest management operations has revived local people's interest in protecting forest resources.

PRIVATE FORESTS

Private forests are currently limited to the plantations established on private land by the private sector. Most of these are of fast-growing species such as Poplar clones. The area of private plantations has gradually increased (especially in the west) following encouragement from recent government policies. As well as the construction industry, the main users of plantation harvest yields are pulp and paper companies (in both the State and private sectors).

⁷ FMPs in northern Iran are usually for ten-year periods.

Companies have started to support local people's short-rotation forestry in private fields, by contracting local individuals to establish and manage plantations.

Most other forest resources (e.g., mangroves) are still under traditional uses by local communities, although the government has carried out some forest protection in recent years.

STAKEHOLDERS

Caspian forests

Caspian forests are Iran's main source of commercial timber, so one of their most prominent uses is for timber extraction. A law of 1959 stipulates that this must follow approved FMPs, which are prepared by FRWO's technical office or by private consultants under FRWO's administration, according to Terms of Reference (TOR). For the last 20 years, most FMPs have been prepared by private consulting companies, but FRWO holds the overall responsibility, providing TORs, supervision and control, and approving the forest management booklets. For some small areas of Caspian forest, FMPs are prepared by universities (e.g., of Tehran, Tarbiat-e-Modarres, Gorgan and Mazandaran) under FRWO supervision. The universities implement these FMPs as experimental forests.

Since the 1980s, FMP implementation (e.g. forest utilization) has gradually been devolved to government/semi-governmental companies and local cooperatives. According to statistics, FRWO used to implement the FMPs for 487 000 ha of forest resources, most of which (almost 80 percent) was solely managed by the government. The planned forest area has now expanded to 1 350 000 ha, with FMPs on almost 1 034 420 ha, 48 percent of which is managed by the government, 36 percent by private companies and 15 percent by local cooperatives. All extracted timber enters the domestic market, as wood exports are prohibited (Anonymous, 2004).

Another important use of Caspian forests (and probably the most widely applied) is local community utilization of resources. Traditional uses of timber products, such as the extraction of lumber and fuelwood for construction, fencing and heating, are widespread in the Caspian forests. Most rural inhabitants of these forest areas live in poverty.

Among the main causes of increased poverty in forest communities are severe population growth (especially in the last three decades), longstanding feudalism prior to the national land reform (1961), long-term neglect of rural livelihoods and inappropriate management schemes in forest policies (e.g., pressurizing forest dwellers to relocate their villages). Local communities have enormous potential to contribute to efficient forest management projects (Yachkaschi, 2006).

A third category of forest uses in the Caspian range are the activities carried out by FDCs. Considerable areas of forests, mainly in lowlands, are semi-degraded or degraded and not economically viable; many of these forests are on low-density and erosion-prone sites. These areas are characterized by densely populated communities, and FMP implementation is almost impossible without the participation of forest dwellers and villagers. FRWO has facilitated the formation of small FDCs to promote local communities' cooperation in organizing and implementing FMPs. The main aims of the FDCs are to (FRWO, 1991):

- rehabilitate and enrich degraded forest resources using local capabilities;
- generate employment and income for local people;
- introduce commercial timber utilization based on FMPs;
- reinforce the provision of welfare facilities in forest villages.

These goals can be effective in alleviating poverty among rural communities and forest dwellers.

Zagros forests

There are three categories of major forest user in western Iran. These are described in the following paragraphs.

Individuals: People who, directly or indirectly, use the forest resources can be divided into two general categories: local and non-resident (from outside the area). The main difference between these two types arises from the basic difference between formal (official) and informal (traditional) ownership rights associated with forests. Local rural and tribal communities regard themselves as the original owners of the resources, despite officially accepted State ownership of forest resources and land. Traditional forest management practices (for cattle grazing, fuelwood exploitation and hunting) therefore continue throughout the area.

Local people also use forests through secondary products utilization cooperatives (SPUCs) set up by the State to organize local communities' traditional uses. There are no timber harvesting plans for Zagros forests, because the native woody species are not commercially harvestable and the region is ecologically sensitive and seriously prone to soil erosion. Instead, these forests are a rich source of NWFPs, such as fruits, oak galls, natural gum and herbal essences. Local communities are major shareholders in SPUCs, which collect and use NWFPs according to approved plans.

Non-residents' main use of Zagros forests is for recreation in the natural forest parks that the State established near major cities. Local communities in these areas benefit from this kind of forest use, mostly through temporary and permanent employment. Recently, the government is planning to devolve forest parks for long periods to the private sector.

Government: As the sole owner of forest resources in Zagros, the government utilizes these resources in three ways: through founding and managing natural forest parks; by implementing forest management schemes that protect and sustain forest resources (e.g., extending the vegetation cover, fencing and reforestation); and through the indirect utilization of forest-related capacities within the area. Some 60 percent of Iran's running water resources are reported to originate in catchments located in Zagros. To enable the use of these water resources in agriculture, water consumption and energy production, the government has carried out dam and hydropower plant projects. These initiatives depend indirectly on the sustainability of forest resources.

Private companies: To a very limited degree, the private sector is involved in implementing NWFP management plans in western Iran.

MANAGEMENT AGREEMENTS: FIGURES, RIGHTS AND RESPONSIBILITIES

Caspian forests

During the preparation of FMPs for Caspian forests, the planner is responsible for carrying out baseline studies (geology, pedology, meteorology, etc.), forestry studies (forest inventory, partitioning of forest into parcels, etc.), the harvesting plan and forestry planning. The planner is also responsible for providing financial estimates, designing training plans for FPAs (both administrators and personnel), evaluating current and future forest conditions, investigating possible human effects on the forest resources, and assessing the district's potential for sustainable forest management (SFM).

The forest planner's rights include the revenue from the FMP (or an honorarium if the planner is a consultant). When the planner is a university, FRWO also grants it permission to conduct research projects.

The State, private or cooperative entity that implements an approved FMP is known as the forestry plan administrator (FPA). The responsibilities of an FPA include harvesting timber products (up to predefined rates), paying royalties to FRWO, constructing and maintaining forest roads and skid trails during the FMP period, reforestation of degraded lands, and other duties stipulated in the FMP. For local cooperatives, the rehabilitation of degraded lands (through reforestation) is particularly important (FRWO, 1991; Anonymous, 2004). The FPA's rights include the commercial benefits gained from implementing the FMP (chiefly through timber harvesting) (Table 1).

Zagros forests

All the various types of management plan conducted in western Iran are for forest protection without timber exploitation. As in the north, FMPs are prepared under contract by private consultants, or occasionally by universities. The planner is responsible for meeting the requirements of the TOR, including carrying out baseline studies, forest resource assessments and socio-economic studies; these last have been the focus of much attention over the last decade. Rights include an honorarium, and the right to conduct research projects for universities. Implementation of FMPs is by provincial natural resources officers, who may assign the implementation of some FMP activities to the private sector. The FPA is responsible for all the issues mentioned in the FMP, including controlling livestock grazing and fuelwood exploitation, and enriching the forest cover through reforestation.

TABLE 1

Benefits and responsibilities of the FPA and FRWO in a co-management case study (Babolroud basin) in northern Iran

FPA		FRWO	
Benefits	Responsibilities	Benefits	Responsibilities
Forest product utilization, including forest grazing rights	Control and patrol of planted areas	Improved forest conservation and protection	Provision of material (plants, fence)
Income from labour	Fire protection and prevention	Reduced costs	Compensation for work done by others
Knowledge transfer	Silviculture operations, including planting and tending trees	Reduced illegal activities	Capacity building of the FPA
Support to development activities for social forestry and livestock	Sharing of benefits	Permanent presence and control	Provision of training in technical forestry skills
	Monitoring of activities	Improved image of and confidence in FRWO	Supervision of FMP implementation

Source: Hess and Buys, 2007.

SPUCs' main responsibility is to ensure the protection of forest resources and the sustainability of NWFP production, through using NWFPs at annual rates set by the NRO. The government has made no official agreement regarding traditional forest management by communities in the west of Iran.

Over the past decade, the State has taken steps to include local stakeholders' viewpoints and tenure rights in FMPs. FRWO and universities have designed questionnaires to gather the relevant information. FRWO monitors all the FMPs implemented by the government, cooperatives and private companies, through provincial NRO experts.

For private plantations, agreements are made between the landowner and the NRO (or the State wood industry), with the NRO being responsible for subsidizing some plantation materials (mainly seedlings). The NRO is sometimes also responsible for introducing applicants to banks for obtaining loans. Most private plantations are supported by the State until the end of the rotation. All timber harvesting rights belong to the private owner, whose main responsibility is selling harvest yields to companies at prices set by the NRO.

Changes and trends

HISTORICAL BACKGROUND

Generally, renewable resources (including forests) in Iran were not subject to government attention before the early nineteenth century. No management scheme for technical or scientific forest utilization was implemented, and there was no institution responsible for natural resources management. Forests first received official central government consideration when the Ministry of Commonwealth was founded in 1823. Thereafter, forests attracted growing institutional attention as Iran's population grew and timber harvesting was industrialized (particularly in the northern Caspian forests). The following are some examples of this attention:

- foundation of the Routes, Railways and Forests Department in 1905;
- establishment of the first Forestry Department of Iran in 1920 (dissolved in 1934);
- foundation of the Forestry Division in 1938;
- formation of the Forestry Administration in 1942 (renamed the Forestry Agency in 1948);
- foundation of the Forestry Organization in 1960;
- constitution of the Ministry of Natural Resources in 1968 (dissolved in 1971);
- formation of the Forest and Rangelands Organization in 1971.

Changes in forest ownership and policies prior to 1988

In January 1963, a resolution was enacted to nationalize Iran's forests (FNL). Based on this, all forests and woodlands were transferred to the government as public property, and all forest management (including preservation, rehabilitation, utilization and extension) were considered State responsibilities. According to notes 1 and 2 of FNL Article 2, "all the forests released to the individuals prior to the enactment will be considered as private properties which could be utilized only with the State's permission. The government can also buy the above-mentioned lands". Later, several laws were passed to transfer all the forest ownership rights mentioned in these notes to the State. These include Article 45 of the National Constitution of the Islamic Republic of Iran, according to which "all natural resources, including forests and rangelands, are held by the government to be utilized for the national commonwealth. Details and forms of utilization are determined by the related laws".

Following the Islamic Revolution, forest lands and resources were therefore considered national property held by the government. Rules were enacted to return private forests to the State.

The livelihoods of forest dwellers received some official consideration in Article 8 of FNL, according to which "the Forestry Office is allowed to issue forest harvest permits for local communities' consumption without taking any share (royalty), due to their actual requirements". This article is deemed one of the major causes of increased illegal logging in the Caspian forests, as local communities exploited forest sites to supply their timber needs. To prevent this, FRWO has implemented welfare plans in recent years, including providing fuel for forest livelihoods.

During the eight-year war between Iran and Iraq (1980 to 1988), no significant changes were made to forest resource policies.

Changes in forest ownership and policies after 1988

In October 1988, as a tool for settling land disputes arising from Article 56 of the Forest and Rangelands Protection and Utilization Law, the Iranian Parliament passed an enactment by which "a seven-member board would be responsible for investigating the objections of farmers holding informal deeds, government institutions, and the owners of orchards and other installations located in forested lands outside the formal urban boundaries". Enactment

of this law somehow resulted in the remaining private natural forest resources being transferred to the State.

Following the 1992 Law on the Preservation of Iranian Natural Resources and Forests, DOE was legally empowered to hold portions of State-owned forest resources as environmentally protected areas where no timber harvest is permitted.

In December 2000, the government passed an enactment indicating that tenure of some marginal forest lands (chiefly consisting of other wooded lands) would be assigned to local people for plantations. According to this law, “the leasing time would be at most 30 years, with rents adjusted every three years (based on economic factors such as the inflation rate)”.

In October 2004, to involve local people in the prevention of further desertification in arid and semi-arid regions, the government stated that “the ecologically ready arid areas for plantation will be conditionally leased to the people provided that a feasible afforestation plan can be presented”. The permanent assignment of these lands will be subject to at least five years of successful devolved management. This has been one of the most effective ways of encouraging afforestation among local people (e.g., farmers) in west, east and central Iran. An amendment to FNL Article 34 states that “all the forest lands in northern Iranian plateaux that were under illegal land-use conversion prior to 1986 will be assigned (i.e., rental will be paid by the former landowner) or fully sold to the government”. With the enactment of this amendment, the natural forests on the Caspian plateaux that remained under private ownership were transferred to the State. Lands that had been converted to other land-use types could not be returned to forest land use.

FORESTS AND FOREST OWNERSHIP IN THE THIRD NATIONAL DEVELOPMENT PLAN (1999 TO 2004)

The third economic, social and cultural development plan passed by the Iranian Parliament paid more attention to forests than the two former plans did. Article 104 of this plan introduced aspects of sustainable natural resource management, including:

- implementing management plans (e.g. livestock–rangeland balance) and relocating livestock outside forests;
- providing local and tribal communities with their fuel and silage needs;
- involving the public in forest planning and implementation processes.

Article 109 charges the government with organizing tribal communities over two five-year plans, providing them with appropriate social services, settlements and infrastructure, but the nature of these provisions is not clearly defined in the article.

FOREST OWNERSHIP AND THE COMPREHENSIVE PLAN FOR PRESERVING THE NORTHERN FORESTS

A Cabinet Enactment of July 2001 laid down the basic policies for preserving Iran’s northern forests; this later became the Comprehensive Plan for Preserving Northern Forests (CPPNF) in September 2003. These policies stipulate the facilities, credits and qualifications required for plantation development, based on State and private administrative capacities. Issues mentioned focus on the allotment of forest management operations among various government sections (e.g., FRWO and DOE) and the private sector. The following are the main points made in CPPNF:

- Policy-making regarding uses of national lands/resources that might incur land-use conversion or a decline in forest area are the responsibility of FRWO and the Supreme Council of Environmental Protection.
- FRWO, DOE and the private sector are responsible for preparing natural resource plans, protecting resources, organizing forest dwellers, relocating livestock outside forest boundaries, surveying, and acquiring forest area deeds.
- FMP implementation is assigned to the State, cooperative and private sectors.

Islamic Republic of Iran case study

The law also emphasizes the need to revise forest management planning so that it includes more local participation.

FORESTS AND FOREST OWNERSHIP IN THE FOURTH NATIONAL DEVELOPMENT PLAN (2004 TO 2009)

The Fourth National Development Plan of the Islamic Republic of Iran was enacted in October 2004. It puts more emphasis on crucial issues such as forest dwellers and forest management, and commits the government to extending environmental training and supporting private sector investments in forestry, especially through plantations. It also outlines the policy of providing non-wood fuel for tribes, villagers and forest livelihoods as an alternative to fuelwood use.

The following are forest tenure-related administrative policies stated in the fourth plan:

- strengthening natural resource stakeholders' participation in SFM (although the mechanism for this is not defined);
- settling State ownership of national lands, and clarifying exemptions and private ownership boundaries;
- developing and supporting investments in the natural resources sector;
- improving the efficiency of natural resource use through public outreach, revised training programmes, reduced bureaucratic requirements, and decentralization.

The most recent change is Article 44 of the National Constitution (served in 2007), which lays down such issues as the privatization of government forest use companies, and private investments in increasing forest cover.

Analysis of tenure systems

FOREST MANAGEMENT

Caspian forests

Caspian forests have always been important as the main source of commercial timber in Iran. In addition, these forests have outstanding natural values, especially for research. Until the twentieth century, forest management practices consisted mainly of intensive and irregular utilization of commercially valuable species, such as *Boxus hyrcana* and *Quercus castaneifolia*, by foreign contractors. Legal regulation of forest management in Iran then made it necessary to organize this timber utilization, and in 1949 FAO experts presented an initial forest management system for northern Iran. This system was implemented extensively until 1959.

The basic framework of the forestry system did not change significantly for almost 30 years, owing to a lack of forestry expertise in the country (Yachkaschi, 1974). Forests were seen mainly as the source of industrial timber products. The scarcity of technical and financial infrastructure (e.g., a road network of appropriate density) also hindered change in the forestry system. Silviculture methods were gradually developed, but little attention was paid to local livelihoods during FMP preparation and implementation; local people's tenure rights were not respected, and communities had no role in FMP preparation or implementation.

The institutional framework for close to natural forestry practices was provided in 1988, and has been implemented since 1991. Most FMPs in northern Iran are based on CPPNF. One of the issues associated with State ownership of northern forests is the high cost of protecting forest resources and preparing FMPs; FMPs are normally prepared through FRWO.

As mentioned previously, the Third and Fourth National Development Plans pay special attention to SFM, but there seems to be a mismatch between the legislation (e.g., the development plans) and FMPs, which still focus on maximum income generation from resources (mostly through timber harvesting).

The government's recent plans to devolve forest management to the private sector seems to contradict the FMP implementation system stipulated by law, which gives government the sole responsibility for monitoring FMPs. For instance, one prerequisite of the legislation regarding FMP implementation is that the government must have an appropriate number of experts to monitor the process, but current policies seek to reduce this governmental role by involving other (private and cooperative) sectors in FMPs. At present, the forestry operations executed by either State or private companies tend to be poorly monitored.

One of the main ways of increasing local community participation in forest management has been through the foundation of FDCs in northern Iran; there were 19 such cooperatives in 1991. FDC executive managers are usually retired FRWO experts or local trustees, and most other managers are local people with appropriate education and training levels. As local people and communities have become more involved, the focus of FDC forest management has gradually changed from biological and technical forest to greater consideration of socio-economic issues, such as the relocation of livestock from planned forest districts. However, the trend for founding FDCs has lost momentum, mostly as a result of economic inefficiency and local mismanagement. For example, there is a basic conflict between the State's and local communities' perceptions of the purpose of cooperatives. In forming an FDC, the State considers objectives such as forest protection and resource sustainability, while local people living in poverty tend to view the FDC mainly as a potential source of income for their own livelihoods.

Nonetheless, the participation of local communities (and sometimes local experts) in managing FDCs can bring benefits for local forest protection, as well as commercial benefits for local people, provided the government supplies the necessary financial support in terms of forest mechanization, subsidizing of activities, etc. The main advantage of an effective FDC mechanism is the community's greater sense of responsibility for protecting forest resources.

In a recent FRWO case study of 70 FMPs assigned to local cooperatives in the north, reductions of 82 percent in illegal logging and 62 percent in forest trespass were reported over a five-year period. The objectives of an FDC should be the same for both State managers and communities. Box 1 outlines some successful projects involving local communities in forest management and utilization.

Box 1. Successful community participation in forest management – case studies

An integrated forest management project carried out by Yachkaschi (2006) in Mazandaran province provides a successful case study that could be replicated on a larger scale across the Caspian region. This project was supported by a wide range of national and international organizations, including the United Nations Development Programme (UNDP), and the Small Grant Programme (SGP) of the Global Environment Facility (GEF). It was carried out in mountainous areas that face many challenges: high population density, degraded forest resources, widespread livestock grazing inside forests, poverty, etc. Increasing migration to the cities (especially by young people) was a potential source of cultural and socio-economic conflict. The project's objectives were to introduce efficient ways of using forests sustainably, strengthen the public's environmental awareness, improve local employment rates (and thus local economic conditions), and promote communities' interest in protecting forest resources across the area.

After seven years of project implementation, results show significant progress towards the aims of enhancing the local economy, improving degraded forest cover, increasing local participation and optimizing forest management practices. Surveys show an average increase of 31.4 percent in families' net revenue (Torabi, 2003). Another project in the same area created 34 permanent and 180 temporary jobs in a village of 707 residents (Mir Rajabi, 2004). Deforestation within the project area was also found to be less than the rate of 1.8 percent recorded for other districts (Karami, 2007).

This project demonstrated that local people can be effectively involved in forest management processes, despite State-ownership and official frameworks. UNDP selected it as one of the three most successful of 80 SGP-funded projects conducted in Iran.

The Alborz Integrated Land and Water Management Project, implemented by the Jihad Water and Watershed Management Research Company and the German Forest Service (financed by the World Bank) also focused on local participation to benefit SFM in northern Iran.

Zagros forests

These forests do not yield commercial timber and were originally subject to forest protection plans only. The first official use plan emerged in 1971 to organize extensive charcoal production systems (Fattahi, 2005). Consumption of charcoal as a fuel has since declined significantly in cities, and is currently limited to some tribal/rural communities. The 1971 plan was abolished after a few years and replaced by a plan for the partial fencing of sensitive forest resources. This had both negative and positive impacts, as plant biodiversity and canopy cover increased in fenced districts, but severe disputes broke out between the government and some local communities, mainly owing to their livelihood dependency on the protected forest sites.

These plans were superseded by the Comprehensive Plan for Zagros Forest Resources in 1988. This was the first scheme in which the State took some account of forest dwellers' socio-economic rights. One of its positive impacts was the replacement of fuelwood by fossil fuels distributed by the government. The plan included relocating livestock and communities out of the forests, but nearly half the rural and tribal population of Zagros live inside or adjacent to forest resources, and would need comprehensive organization and accommodation if relocated. The plan also paid insufficient attention to local residents' informal tenure rights, which restricted its success in many areas. It was therefore revised as the Management Plan for Zagros Forest Resources, under which 82 forest management plans covered a total of 1.84 million ha, with an average of 21 new plans a year adding approximately 470 000 ha (Anonymous, 2004).

However, this plan also had drawbacks, including the following:

- Discrepancies between the plan’s schedule and the availability of funds from the Planning and Budgetary Organization often hampered FPAs’ implementation of activities.
- The planned districts were not subdivided into regularly sized management units (parcels), so it was difficult to implement a monitoring and control system.
- Little attention was paid to the utilization of NWFPs.

MPZFR was replaced by the Comprehensive Plan for Preserving Zagros Forests (CPPZF), part of a countrywide forestry plan announced in 2002 by FRWO. This plan, which is ongoing, is based on an SFM strategy for western Iran aimed at improving forest dwellers’ socio-economic conditions by:

- creating permanent employment that reduces people’s dependency on converting forest to other land uses;
- supplying credits that alleviate poverty through forest rehabilitation and reforestation projects;
- providing fossil fuels for forest dwellers.

FRWO continues to extend the area under CPPZF, which had reached 325 694 ha in 2007. As shown in Figure 1, the plan is implemented by five different types of stakeholder: A) non-local cooperatives; B) FDCs; C) local councils; D) traditional users; and E) individuals introduced by local trustees.

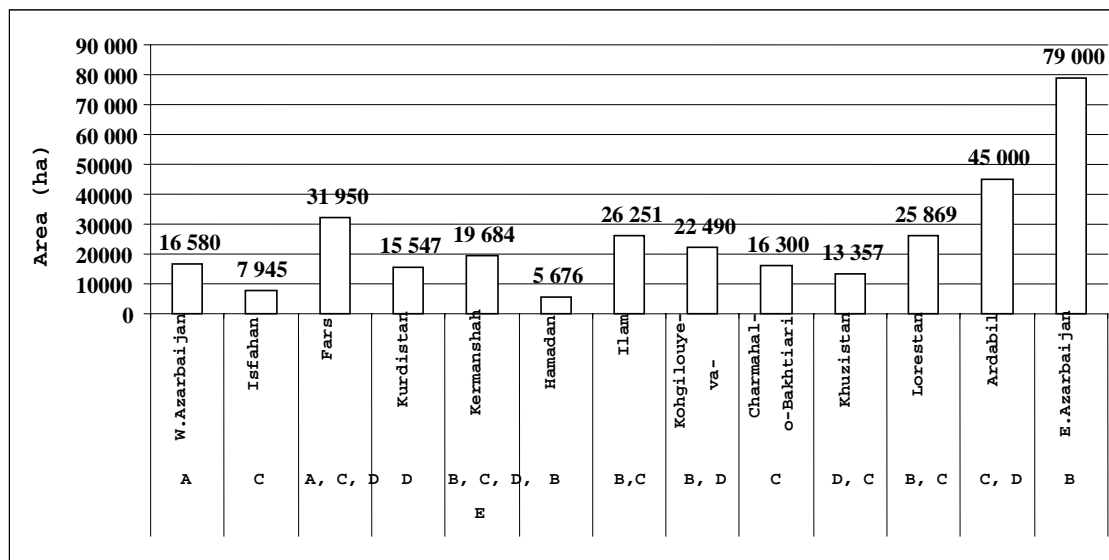


Figure 1. Extent of CPPZF area in Iran’s western provinces, 2007

In spite of CPPZF, however, migration to major cities has increased significantly among both rural and tribal communities, especially their active young populations. This is a result of clear differences in welfare levels, and is contributing to the gradual decline of tribal/rural communities. The situation is expected to hamper the government’s implementation of forest management operations, particularly those involving the cooperative sector (e.g., NWFP utilization and forest protection) (Amani, 2006).

Other informal types of forest management currently implemented in Zagros forests are the residue of systems that rural and tribal communities have been applying for thousands of years in different parts of the region. Among these are the traditional pollarding system carried out in Kurd-dominated northern Zagros, and the conventional silvopastoral rotation with livestock grazing implemented in central and southwestern parts (e.g., Lorestan

province). Although the government (i.e., FRWO) has done little to recognize and organize those systems, recent studies on their potential advantages, effectiveness and weaknesses (e.g. Ghazanfari, 2003; Adeli, 2006) indicate the need to include them in new formal forest management policies.

Other forest resources

The only FMP type in other parts of Iran are the natural resources management plans currently implemented to manage rangelands, woodlands and sparse forest resources. Approximately 660 000 ha is under these plans (mostly in provinces outside the Caspian/Zagros range). The plans are implemented by three stakeholder groups – non-local cooperatives, local cooperatives and traditional users – and their main activities in sparsely forest areas include utilizing NWFPs such as natural gum.

LIVELIHOODS

Caspian forests

It seems that about 70 years ago, local people's livelihood dependency on Caspian forests was far less than it is today. Rich old-growth forest stands and a relatively low population allowed light traditional wood harvesting, mainly for fuelwood and construction. Later, booming population growth dramatically increased the need for livestock grazing and wood resources. An estimated 1 million people now use the forests of northern Iran.

Traditional animal husbandry using understorey vegetation and pollards for livestock grazing (mainly of cows and sheep): According to FRWO statistics, 5.7 million livestock units are now settled in or near the Caspian forests. Of these, FRWO has plans to relocate up to 4.3 million units, and 600 000 units have already been relocated. Related plans include relocating forest dwellers (with their livestock), amalgamating small villages in low-altitude areas, and assigning non-forest lands on the plateaux to forest dwellers. Relocation of residents and livestock has faced many challenges, including the unsuitability of the new residential environments assigned to former forest dwellers, and villagers have sold most of the non-forest lands assigned to them, for house construction. In spite of the large government credits issued for relocation, serious socio-economic issues have arisen, including cultural problems for the former forest dwellers settled in towns. Relocated livestock has not been organized. After implementing these relocation plans from 1989 to 2001, FRWO revised the scheme as part of the recent CPPNF, which aims to make social improvements to promote forest development.

Fuelwood extraction: Forest dwellers use wood extracted from the forest for fuel (especially in winter). To control this, fines were introduced for forest dwellers who exceed their annual wood assignments from the State. However, the basic issue of resolving forest dwellers' economic problems (e.g., fuel supply) seems to be more important.

Conversion of forest lands: Although the government has sought to clarify its ownership of natural resources, conflicts continue to arise when different government organizations occupy forest lands for their own specific purposes. Examples are the planned construction of a petrochemical works on about 200 ha of degraded forest lands, and the recent conversion of 7 ha of forest area into a municipal waste landfill in eastern Mazandaran (personal communications with Mazandaran provincial NRO and DOE). Although land-use conversion of forest land should be strictly limited, or even prohibited, the traditional (and still informal) rights of forest inhabitants should also be more fully taken into account. Most land-use conversions (particularly in low-altitude areas) to orchards, farms and paddy fields – which have resulted in significant soil erosion, heavy floods and climate change in recent decades – are at least partially rooted in poverty.

Illegal logging: Owing to increased demand for wood, illegal logging has been a source of income for some local – and a few non-local – livelihoods in recent decades. According to official data, 2 million m³ of industrial timber was legally extracted from the Caspian forests in 2001, along with an equal amount of illegal timber. In response to this problem, the government has introduced a strict monitoring system, mainly through forest protection guards, and a mechanism to ease wood imports into the country. However, the considerable reduction in legal wood harvests in the last couple of years (down to 900 000m³/year) seems to have increased illegal logging.

It therefore seems that creating stable income sources for forest dwellers (through NWFP utilization, agroforestry systems, etc.) and improving their socio-economic conditions would be more beneficial to rural community development – and thus SFM – than community relocation policies are. Such improvements would also help stabilize the State's ownership of forests, thereby diminishing their conversion to other land use.

Zagros forests

Livelihood systems in Zagros forests are more complicated than those in northern Iran. Local communities' great dependency on forest resources has been a feature for thousands of years, and forests have always been a major source of livelihoods. Livelihood dependency on forests can also be indirect (ecotourism, etc.).

Traditional forest management for animal husbandry: Livestock is a major source of income for forest dwellers. An estimated 50 percent of Iran's livestock units are in Zagros region, where traditional management systems are based on the type of animal kept and the topography of mountainous forests. For example, understory vegetation and tree pollards are used to feed cattle in the Kurdish communities of northern Zagros. Native goat and cattle species are the most common, owing to the area's harsh conditions.

In the pollarding system, traditionally defined forest districts are owned by village families. Each district is normally divided into sub-districts, and each family divides its forest into three or four parcels in which a systematic pollarding operation is carried out every year (mainly on oak trees).

In southern Lor- and Bakhtiari-dominated areas, the topography allows cultivation, which can lead to extensive land-use conversion. Native sheep (and goats in some areas) are kept here. The dominant system is for six-month rotations of livestock grazing in defined subdistricts. The frequency, location and mechanisms for grazing vary among tribes, based on the climate, the nutritional richness of the vegetation and tribal mobility, so that all subdistricts are passed in the course of a year.

Fuelwood extraction: Harsh cold winters have led to a long-term tradition for extracting fuelwood. Vast areas of the forest resources around major cities (Sanandaj, Khorramabad, Shiraz, Kermanshah, etc.) were degraded to supply charcoal in the early and mid-twentieth century, and extensive poverty among rural and tribal communities has made them major fuelwood consumers. The policy of fining people for extra wood utilization has not brought positive results for forest protection, and communities' poverty and need of basic necessities are major sources of conflict. The government's current policy of supplying fossil fuels to forest dwellers may help alleviate this problem, provided the fuel is distributed frequently and easily among users.

Conversion to cultivation and other land-use types: Within western Iran, different areas can be successfully utilized for horticulture, fishery and agriculture. During the National Land Reform of the 1960s, it was announced that cultivated lands within forests could be documented and assigned to local owners. Some forest dwellers took advantage of the long delay in implementing this decision, by expanding their fields through deforestation. Other areas were deforested for the construction of industrial infrastructure.

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Some local communities in the region still live below the poverty line (Adeli, 2006) and continue to depend on forest resources. In recent years, increasing migration to cities has exacerbated existing problems for forest management.

In other parts of the country, including some with sparse forest resources, local livelihoods depend on forests for such activities as livestock grazing and fuelwood extraction. These trends require further investigation.

CAPACITIES

Caspian forests

The most significant value of Caspian forests comes from their rich plant biodiversity. Research institutes and universities have carried out studies on the biological aspects of these resources.

Caspian forests also have potential recreational values for ecotourism. An estimated 8 million visitors a year travel northwards to enjoy these services and, with efficient short-term planning, ecotourism in local forests could generate far more revenue than timber extraction.

Commercial timber production is another capacity. Caspian forests are the country's sole source of industrial woody products, and could supply more than the currently extracted 900 000 m³/year, as long as sustainable management plans that take account of the diverse ecological features of the stands are followed. One prerequisite for FPAs could be the construction of a well-planned, good-quality road networks.

Other potential capacities of Caspian forests are fisheries, wildlife (organized legal hunting) and NWFP utilization.

Zagros forests

These forests have high potential for NWFP extraction. Such products as natural gum, herbs and galls have been used locally for many years and could contribute to sustainable non-wood forest yields.

The region's population of about 5 million people has well-established local knowledge of producing many livestock products, such as dairy goods. Other natural resource-based services, such as bee- and silkworm keeping, can also be regulated as sustainable sources of revenue, for not only local communities, but also the State at a national and international scale. With support from the State and private sectors, this could make an important economic contribution.

With its many recreational values and rich cultural heritage, Zagros could also generate revenue from ecotourism.

POLICY AND LEGISLATION

Owing to State ownership of forests, policies are regulated by the government and enacted/announced by Parliament. Forest management according to these policies is then implemented by the relevant bodies, such as State companies, cooperatives, private entities and FPAs. The activities of private landowners (of plantations) are also subject to government policies, and private landowners are excluded from policy-making processes. This factor discourages private reforestation in Iran, which now covers only 261 243 ha according to official data.

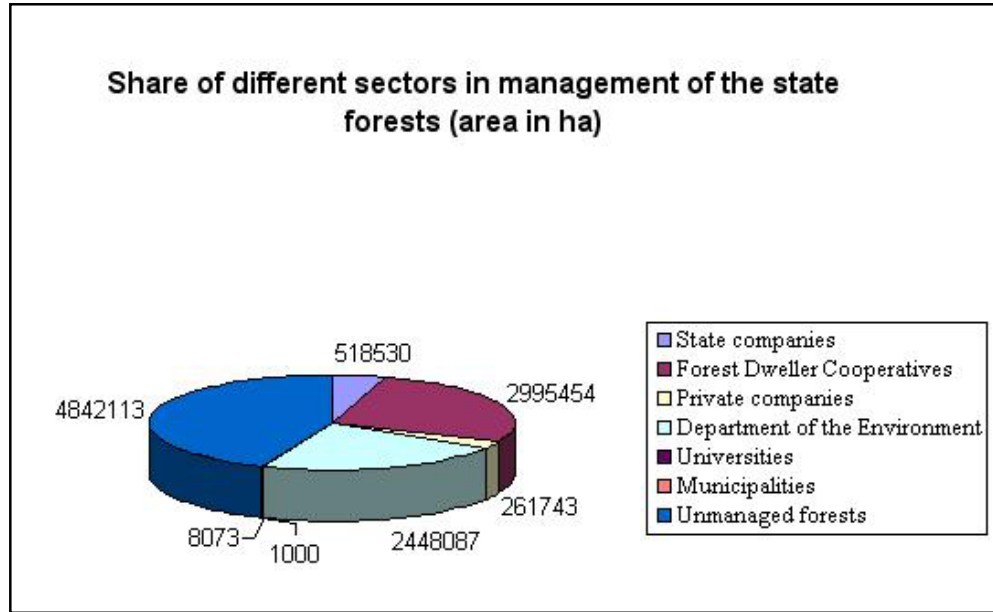
The same problem affects the forests managed by municipalities. Although the devolution of forest park management would seem to enable municipalities to implement their own management systems, they are still bound to apply FRWO legislation. The nature of the contracts between municipalities and FRWO has resulted in only a few forests currently being under municipal management.

The universities managing devolved forest areas are also bound to apply FRWO forest management legislation, but they have the additional right to conduct small- and medium-scale research in the forests they manage.

TABLE 2
Shares of State forest under different management bodies (in hectares)

State companies	Community joint forest management	Private sector	Managed forests (with FMPs)			Unmanaged forests	Total
			DOE	Universities	Municipalities		
518 530	2 995 454	261 743	2 448 087	8 073	1 000	4 842 113	11 075 000

Figure 2. Shares of State forests under different management bodies



FMPs have not been prepared for approximately 4 842 113 ha of forest resources (Table 2, Figure 2), mainly in traditionally managed forest areas of Zagros and other bioclimatic zones. According to the legislation of the National Environmental Protection Council, DOE owns and manages approximately 2 448 087 ha of natural forests. Local cooperatives manage 2 995 454 ha under joint forest management (FDCs). Local people’s involvement in FPAs is mostly in low-skill (and thus low-paid) forestry work, such as forest protection, reforestation and road construction, rather than in district management planning. This often reduces local people’s interest in participating in FMP implementation, in both western and northern regions.

Public awareness of forest policies is relatively low across the country. Many forest communities are not informed about changes in national forest policies, news of which is transferred to local NROs, often to the benefit of State and other companies. There is no mechanism for disseminating informative to stakeholders, including local communities. This situation could be improved by workshops among forest communities to raise their awareness of policies and legislation that affect their local forest resources. The media (radio and TV) are another potentially effective tool.

Forest tenure, sustainable forest management and poverty alleviation

The government's ownership of all forests in Iran is based on the viewpoint that "all forests, rangelands, water surfaces, mountains and natural resources belong to the whole nation and must be managed and utilized by the government (as the nation's representative) so that the benefits and outcomes can be spent for the entire nation".

The following are the main drawbacks of Iran's current forest tenure systems:

- The legal framework for SFM planning is inadequate, mainly because the relevant legislation is outdated. FMPs still focus on technical forestry issues – inventory, cutting rates and utilization methods – and neglect important social aspects such as forest tenure rights, livelihoods, income-generating potential, migration and public participation.
- Responsibility for forest management (currently with FRWO) has been passed from one ministry to another, which has not had a positive effect on SFM.
- Forest tenure is poorly reflected and defined in much forest legislation (e.g., FNL and the Forest and Rangelands Protection and Utilization Law), mainly because of a weak understanding of the concept.
- There is only limited cooperation among the different institutions involved in natural resource management (FRWO, DOE, the Ministry of Energy, the agriculture sector, social and educational service institutions, etc.). This hampers SFM development and implementation.
- The ten-year duration of FMPs assigned to FPAs in northern Iran is too short.
- The absence of an effective monitoring system for FMP preparation and implementation is a major challenge. Forest inventory data are generally low-quality, and FMPs' technical estimations unreliable. FRWO, which is responsible for monitoring, suffers from a long-term lack of human and financial resources and of an effective mechanism for monitoring.
- National forest surveys are often incomplete, time-consuming and costly; lack of funds and human resources are a crucial reason for this.
- The limited collaboration between private landowners and official bodies restricts the expansion of private plantations across the country, in spite of the financial incentives the State has started to offer.
- A lack of stable income sources in forest communities (owing to inefficient forest management mechanisms) has increased migration in recent decades. This too can have a negative effect on SFM.
- So far, the State has shown little willingness to recognize – and thus utilize – traditional forestry schemes. Instead, existing legislation has tended to emphasize the relocation of cattle and forest communities.

PRIVATIZATION

The extreme poverty of many forest communities makes the privatization of Iran's forests an inappropriate response; significant shortages of minimum living requirements mean that forest dwellers granted resource ownership are likely to deforest their forest areas to generate immediate income from agricultural fields or open ranges for cattle grazing, particularly in western areas.

The lack of an effective monitoring mechanism (mainly as a result of weak institutional frameworks and executive bodies) is another concern for forest privatization in Iran. For example, private ownership of rich forests in northern Iran is likely to result in significant quantitative and qualitative alterations, including:

- conversion to other land-use types, especially villas, hotels and resorts, by private enterprises;

- short-term overexploitation of valuable old-growth industrial timber without consideration of FMPs, by private wood and paper industries;
- overgrazing, illegal logging or conversion to low-efficiency farming, by rural communities or FDCs.

Although existing legislation has established an effective monitoring system, the tools for implementing it are still weak. Therefore, the team who prepared this study does not recommend privatization, at least in the short term.

Most of the experts attending the validation workshop in Tehran believe that in Iran, private ownership should only be applied to private plantations. Most of these plantations are established by farmers on land that was formerly under cultivation, and the incentives offered by the State are still inadequate. Although this aspect has not been officially assessed, it seems that farmers lack motivation to convert their fields into plantations. There is little cooperation between local people and major wood industries or NROs (as potential contractors), and farmers are unsure of the long-term success of their investments in plantations. Recently, the State has been investigating the potential for assigning areas of public natural resources – mainly other wooded lands – to local people for plantation establishment. Initial leases would be for 30 years, with the option of extending them to 99 years subject to set conditions. The potential outcomes of this scheme have still to be assessed.

INTEGRATED PARTICIPATORY FOREST MANAGEMENT

With a few exceptions, the forest management schemes implemented in northern Iran have not contributed to SFM. In several cases, the methods introduced according to legislation have threatened local livelihoods, thereby increasing migration. Although the stated objective of forest legislation is to increase local participation in forest management, the policies themselves focus more on relocating communities (which the State often claims has been a success). Recent FMPs show promise (at least in their basic terms and TORs) for increasing public participation, but it is too early to assess how effective they have been in doing so.

The long-term policy of relocating forest communities has caused a significant decrease in forest dwellers' revenue, while the resulting increase in migration to cities has been the source of several socio-economic problems, including unemployment, cultural differences and lack of government support. Instead, there are clear positive implications for SFM and poverty alleviation in participatory forest plans, where local people have an important role in managing forests (Yachkaschi, 2006). The study team suggests that integrated forest management following participatory approaches be introduced, as local participation is also a major consideration in Agenda 21. Although the State has not widely applied such a method, the outcomes of experimental projects have been promising.

An integrated forest management approach cannot succeed without paying sufficient attention to poverty alleviation in local communities. All available resources should be directed to forest management planning and poverty reduction. One of the negative aspects of FDCs is their incorrect definition of local participation; they tend to use local people as low-skilled forest workers, rather than involving them in forest management planning and implementation. Although communities' basic requirements should be supplied through temporary and permanent employment opportunities, their long-term experience, knowledge and interests should also be integrated into the planning process. If local people are not involved in forest management, the creation of income sources from employment in forestry operations cannot be viewed as local participation.

In northern Iran, a participatory forest management project could reduce local poverty considerably through revenue-generating sub-projects that promote SFM. If sufficient revenue can be made within the communities, the migration rate will decrease. In addition, traditional tenure rights should be respected and public awareness of forest resource protection promoted.

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Another positive step would be to train local communities in environmental issues, through small local workshops on the basics and methods of participatory forest management and environmental protection. Sub-projects that use local participation to increase revenues and SFM can be based on such activities as:

- animal husbandry: replacing traditional low-yielding cattle breeds with hybrid races kept in small barns near but outside the forest;
- agroforestry, through short-rotation forestry on formerly cultivated low-yielding slopes;
- cultivation of herbs such as borage.

The sub-projects should be simple enough to be carried out with the skills and expertise available in the villages. Successful plans will be based on a clear understanding of the potential, capacities and restrictions of the site. Ownership will remain with the State, but tenure rights for resource use could be granted to forest dwellers. In participatory forest management, local communities are not viewed as a destructive factor for forests. Instead, the available capacities (legislation, policies and natural and human resources) are used to make rural communities a potential source of forest protection. FRWO's aims can be achieved through integration with local capacities.

One of the priorities for successful integrated forest management is keeping local communities in their long-established residential areas, rather than relocating them (or forcing them to migrate). Relocation of rural communities and migration to cities should not be deemed a success for forest policy-makers. In addition, the State's strict definition (and sometimes fencing) of forest boundaries (which national forest managers have been considering for a long time) will not succeed – and may even cause serious conflicts between communities and the state – unless local communities are provided with alternative income sources. Rural development, through alternative income sources, increased yields, etc., is a prerequisite for the effective establishment of official forest boundaries.

At the case study workshop, FRWO experts stated that the lack of technical capacity of FDCs in some northern districts is leading to further forest degradation. This is the reason why some forests are returned to FRWO, although local power groups, such as members of parliament, sometimes succeed in blocking these returns. The study team recommends that participatory integrated management be developed, with close collaboration among local communities and government organizations.

COMMERCIAL FORESTRY

For commercial forest sites where State companies are responsible for most FMP implementation, appropriate species for silviculture should be selected, as a positive step towards SFM. Selection should be based on sustainable land-use planning regarding the forest site's potential.

State and private companies tend not to pay much attention to existing local livelihoods, mainly owing to the weak monitoring systems of provincial NROs. Companies sometimes feel no responsibility for employing local people and providing them with an income source. Generally, minimal human resources are employed in forestry operations to ensure maximum profits for FMP administrators. Some FPAs restrict resource access for local people and their livestock.

TRADITIONAL FOREST MANAGEMENT

In western Iran, government management has had little success in promoting public participation in SFM. Many rural and tribal communities in Zagros are totally dependent on forest sites because understorey cultivation and livestock are their only sources of income. The authorities have invested much effort and revenue in reducing human settlement in forest areas, but the capacities of forest communities could instead be used to improve natural resource management. Forest planners, administrators and managers should not ignore the capacities and needs of local communities. It seems that modified traditional forest

management could increase SFM, but this is not currently recognized by State organizations. The State could identify and adapt traditional local management based on communities' widespread local experience. Positive aspects of traditional systems could be modified to suit current requirements and used in participatory planning.

The official pressure on forest dwellers to accept State ownership of forests has been a major cause of conflict. Over the last 30 years, the government has responded to a sudden and significant population increase (particularly in rural and tribal areas) by relocating communities and restricting their access to forests, rather than by helping them to modify traditional forest management practices, creating alternative income sources and subsidizing their requirements. At the case study workshop, it was observed that assigning marginal forest lands to local people for plantation projects could generate revenue, extend forest area and replace informal management systems. Communities' willingness to replace traditional systems depends on more than potential income generation, however. Other factors such as fuel supply, cultural issues, NWFP utilization and animal husbandry also need to be taken into account.

In Zagros, several different local management methods exist. Rather than prescribing a uniform FMP for the whole region, an integrated FMP based on traditional methods should be applied to each area, taking into account specific natural, cultural and socio-economic conditions. During the study team's field excursions and interviews in Bakhtiari-dominated poor tribal communities of central Zagros, most surviving communities expressed a willingness to modify – or even abolish – customary forestry methods as part of an integrated new framework. This issue needs to be studied and evaluated in different subregions (Adeli, 2006).

The priorities for projects that modify traditional management systems should be protecting forest resources and enhancing local livelihoods. Informal tenure rights should be recognized, organized and respected. Current low-yielding forest uses (some of which are destructive) can be replaced by site-compatible rational projects that help reduce poverty. The people best-suited to furthering this aim are high-profile local people, such as religious leaders, who can be trained and managed by the local authorities and NGOs to inform community members and explain the aims, objectives and mechanisms of FMPs.

Long-term conflict between communities and the State has resulted in cases of rapid forest degradation by local people. Forest communities' high dependency on forests can gradually be reduced through the foundation of small natural resource-based industries, such as small factories for processing NWFPs and poplar plantation yields. This could reduce migration considerably, thereby preventing the resultant socio-economic problems in major cities. To achieve this, forest management should be gradually privatized according to a participatory framework that recognizes local communities as the original holders of tenure rights. A powerful monitoring system is required.

The integration of traditional forest management into current forest management practices can help retain human resources in forest areas, which is essential for the implementation of any forest protection practices. This would help move the official natural resources management sector forward to achieve SFM.

FORESTS IN OTHER AREAS OF IRAN

In other bioclimatic areas of Iran, the government has paid little attention to managing the sparse forest resources efficiently. Many old-growth woody stands in these areas are not classified as forest resources according to the FAO forest definition of more than 10 percent tree cover, so they are not discussed in this case study. Nevertheless, economic incentives from the government could encourage private bodies to extend plantations, thereby preventing further erosion and pollution in these areas.

Conclusions and the way forward

The following are the study team's recommendations for alleviating poverty and improving forest management, They are based on case study findings and discussions and shared experiences from the regional workshop:

- Forest legislation and policies should be fully revised to bring them into line with international sustainable development indices.
- A national land-use plan that takes into account the relationship between forest communities and forest resources should be designed. This would promote the involvement of local communities into forest management affairs.
- It is recommended that the State include public consultations in forest policy-making and legislation processes.
- FMPs should be based on local communities' capacities for participatory forest management. FMP activities can then be implemented with greater community involvement and participation.
- Local people are responsible for a significant proportion of illegal logging in northern Iran. Case studies show that the best way of solving this problem is to improve economic conditions and raise awareness of the environmental values of non-wood forest resources. To begin with, local people should be guided by planners. Then participatory income generation projects and environmental training workshops can be introduced.
- The relevant entities – DOE, FRWO etc. – should develop a legal framework and mechanism for preventing illegal logging. Stronger human and financial resources will be required for this.
- Identifying the traditional boundaries of forest districts would be a good way of involving local people in the management of State-owned forest resources. This would encourage communities to participate in forest expansion, reforestation and forest protection, with income-generating activities financially supported by the State. Cooperation between the State and communities can be very beneficial.
- Successful participatory forest management projects in Caspian forests (e.g., Yachkaschi, 2006) could form the basis of participatory management models for other parts of the region.
- It is recommended that the State carry out comprehensive research on the types, conditions and potential impacts of traditional forestry. Traditional systems can then be modified and enhanced to suite current socio-economic situations. Forest legislation may need to be modified.
- FRWO and State forest industries should support private landowners, including through financial incentives, and encourage them to extend existing short-rotation plantations for the wood and paper industries.
- Forest tenure issues have received little attention throughout the long history of forest policy in Iran. According to the literature, main priorities have been technical forest management factors, such as forest utilization and forest resource/landownership. Legislation for forest resource tenure has undergone a slight change, and FRWO should now pay more attention to clarifying and legislating formal and informal forest tenure in Iran. It is recommended that some forest management operations be devolved to the private sector and local communities.
- It is necessary to develop and implement efficient methodologies for a national forest inventory system, based on international experience. FRWO's efforts to establish a national forestry database should be increased and accelerated.
- All participants at the regional workshop emphasized the need to improve monitoring systems, including those to monitor the quantitative and qualitative factors of concessions and cutting areas.

- Assigning FMPs for longer periods would encourage private bodies to implement them in northern Iran. This would require effective monitoring of all forest management operations.
- Although all Iran's State forests provide open access to local people (for gathering NWFPs and for limited cattle grazing), there are administrative obstacles to obtaining access to forest resources; these should be eliminated by the State. Full recognition of local traditional rights is necessary.
- An association of forest tenure owners should be set up to defend their interests. A first step would be to identify all stakeholders and forest user groups, and establish links between these and national forest policy-makers. This would give forest stakeholders a platform for communicating their interests and tenure-related problems.
- Ecotourism projects in forest areas of Iran should be implemented with local community participation, so that plans are profitable for both the government and local people in terms of forest protection, ecotourism value and revenue generation.
- During the case study workshop it was agreed that regional forest management planning should be at least partially decentralized from central government to provincial NROs (as regional decision-makers). This would ensure that the natural, social and economic features of a region are understood by local forest administrations, and thus incorporated into forest planning processes.
- Universities, research institutes and operational sectors should survey international sustainable development indices within Iran, to improve the monitoring and evaluation of Iran's FMPs.
- Legislation should be adapted to encourage all government organizations to promote public participation in forest management at the local level (e.g., in watersheds).
- FAO is encouraged to take the specific conditions of Iranian forest resources into account in its forest definition. At present, a large portion of the country's inland forest resources are not classified as forests according to FAO definitions. This could encourage FRWO to declare them non-forest areas and to allow their extensive conversion to other land-use types by State or public bodies. For such cases, it is recommended that FAO adopt the greater than 5 percent tree cover currently applied by FRWO as its definition of a forest.
- Raising politicians' awareness of forest policy issues (through workshops, field trips, the media, study tours, etc.) might encourage them to include forest issues more fully in basic national policies. Active NGOs can play a crucial role in this.

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ANNEX 1. SAMPLE JOINT CONTRACT FOR PRIVATE PLANTATIONS

Contract for participatory poplar plantation between local individuals and NRO	
Year: ...	
Objective: Wood production in low-efficient private lands	
1 Contract for: Irrigated poplar wood farming conducted in ...ha using fast-growing clones	
2 Plantation features	
2.1 Species: poplar cuttings or seedlings (Density: number of trees per ha)	2.3 The cuttings/seedlings will be planted in rows, each row 2 m from the next. The plantation spacing is 1.5 m.
2.2 Area under contract: ... ha and the amount of cuttings/seedlings is for the entire area.	
3 Terms of contract	
3.1 The plantation applicant will pay ... Rials for each seedling/cutting. In addition, labour costs will be on the applicant.	
3.2 All silvicultural operations (including replanting, weed removal, fertilizing and regular irrigating until harvest), other required treatments (e.g., applying pesticides, pruning, removing dead trees) and any unexpected needs will be provided by the applicant.	
4. Bond	
According to my application issued in..., I certify that I am Mr ... the son of ... holder of ID number ..., resident of village... district..., on date..., under the contract for large-scale poplar seedling/cutting plantation in my ...-ha field, and warrant to accomplish the abovementioned operations and treatments, under the supervision of NRO experts according to the established practices. In case of non-compliance with the contract, I warrant to return all the facilities and credits received, plus all relevant costs, to the office on receipt of the notification.	
Signature of applicant:	Signature of head of NRO:
Signature of NRO expert:	
Note: The field plan is attached to the contract.	

ANNEX 2. SAMPLE CONTRACT FOR CEDING IMPLEMENTATION OF AN FMP IN NORTHERN IRAN TO A GOVERNMENT, COOPERATIVE OR PRIVATE COMPANY

Based on Note 1 of Clause 2 of the FNL, and Clause 3 of the Forest and Rangelands Protection and Utilization Law and their executive statutes and amendments, and citing letter no... of the FRWO deputy of northern forests, to implement forestry plans a contract will be signed with the following terms and conditions between Mr. ..., son of..., holder of ID number..., issued in..., born in ..., the current head of the provincial NRO, as the FRWO representative

and

Mr. ..., son of..., holder of ID number..., issued in..., born in ..., the executive manager of ... company as the Forestry Plan Administrator (FPA).

Clause 1. The contract includes implementation of a forestry plan featuring ... ha of area, considering the relevant rules and disciplines in FRWO Forestry Plan booklets.

Clause 2. The duration of the contract will be... years from..., after which FRWO may extend the contract duration subject to reapplication by the FPA, provided that he has successfully performed the set terms (confirmed by NRO experts).

Clause 3. FRWO's share (royalty) will be calculated and received by FRWO as 1 percent of the value of the industrial timber, which the FPA is bound to respect, based on the current rules and disciplines. In addition, the royalty on each fuelwood stere will be. .. Rials.

Clause 4. Tax on harvested trees will be received according to Clause 15 of the Forest and Rangelands Protection and Utilization Law, and relevant notes.

Clause 5. The FPA is bound to pay 10 percent of the royalty share and related tax on the tree harvests of all years on issue of the harvesting permit, and the remaining 90 percent in the September following application for the transportation permission (after harvest and remeasurement operations).

Clause 6. If the FPA does not pay the shares and taxes by the end of September, FRWO can claim them by any means possible after announcement of a 30-day deadline.

Clause 7. The FPA is bound to pay all other relevant tax and insurances other than the defined shares.

Clause 8. Citing this agreement, a one-year contract will be signed every year.

Clause 9. The annual harvestable volume will be defined by the provincial NRO according to the transactions signed on registering the harvestable trees, and will be used as the basis for calculating the portions of industrial and fuelwood timber and thus the harvesting shares and taxes.

Clause 10. If any other trees (other than the signed trees) are damaged or uprooted during the harvesting operation, their volume will be added to the contracted harvestable volume, and subtracted from the following year's harvestable rate. The maximum portion of such extra harvest can be no more than 3 percent of the total volume defined in the harvest permit.

Clause 11. All the costs associated with implementation of forestry operations including ...m³ of harvestable timber, ... ha of forest extension, ...ha of construction and maintenance of nursery, ... ha of seeding area, ...ha of forest reserves, ...ha of plantation treatment, ...km of main road, ...km of secondary road and ... km of skid trails construction, ...ha of silvicultural treatments, obtaining ... machinery, ...m² of building construction, employment of ... experts and... forest workers, payment of ... Rials as travel costs and overtime for officers attending required missions, the costs of planning or revising per ha, and any other technical affairs should be paid by their legal deadlines by the FPA. The issue of each year's harvest permit will be subject to accomplishment of the previous year's operations.

Clause 13. The FPA is bound to sign and deliver a copy of the forestry plan to the provincial NRO.

Clause 14. The FPA is not allowed to assign any of the contract terms to another, without the permission of FRWO.

Clause 15. To strengthen the available capacities and potentials across the area, improve the FPA's economic conditions and improve local communities' economic and social level, the FPA will be allowed to conduct auxiliary activities (e.g., beekeeping, mushroom culture, hatchery, local wood industries, and ecotourism) following FRWO approval and on acquisition of the necessary permits.

Clause 16. The FPA is bound to conduct any programmes for the qualitative/quantitative improvement of production, particularly the preservation of forest and forest products.

Clause 17. The FPA is bound to apply FRWO policies for distributing, pricing and trading it forest products.

Clause 19. The FPA is allowed to use pre-existing roads and constructions provided maintenance and repair costs are paid.

Clause 21. The FPA is responsible for providing and keeping the minimum fire fighting equipment defined by FRWO within a maximum of two months from signing this contract.

Clause 23. FRWO is responsible for dispatching ... experts and officers to the area (as plan observers) to control and supervise the FPA's accomplishment of the defined terms.

Clause 24. The FPA must have sufficient expertise in forestry operations, and a at least a third of the directorate should be specialized in forestry. Experts should participate in most forest rehabilitation, construction and utilization operations (a minimum of B.Sc. or associate in forestry is needed for this, together with experience of conducting and supervising forest plans and forest utilization).

Clause 27. Silviculture treatments of all the forest plantations adjacent to the FPA area will be the responsibility of the FPA.

Clause 28. Conservation of the planned forest area (e.g., establishing green belts, fencing critical areas, providing fire fighting equipment and conducting fire fighting operations when needed, taking adequate measures to prevent illegal logging and occupation/destruction of the national lands, etc) will be the responsibility of the FPA.

Clause 30. To alleviate poverty and socio-economic problems across the area, the FPA is bound to employ its human resources from the local residents introduced by the NRO.

Clause 31. In the case of non-compliance to any of the conditions in the contract, FRWO will dispossess the FPA and claim compensation for terminating the ten-year contract with the FPA.

Clause 32. This contract has been prepared and signed by the two parties in 32 clauses and nine notes.

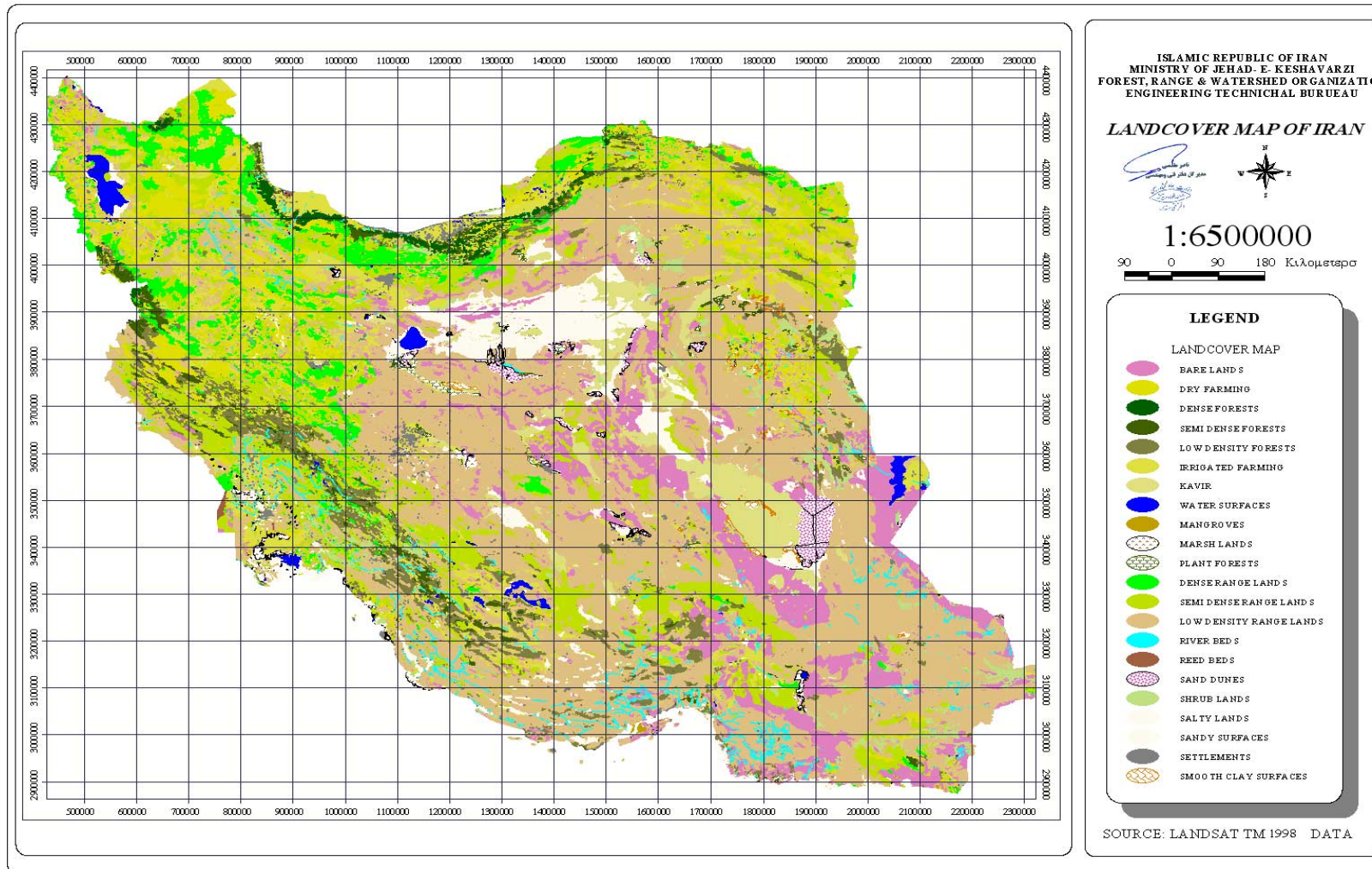
Signatory:

FPA

Head of the provincial NRO and FRWO representative

Islamic Republic of Iran case study

ANNEX 3: LAND COVER MAP OF THE ISLAMIC REPUBLIC OF IRAN (FRWO ENGINEERING AND TECHNICAL BUREAU, 2005)



ANNEX 4. POLITICAL MAP OF THE ISLAMIC REPUBLIC OF IRAN



ANNEX 5. FMP AREAS ASSIGNED TO DIFFERENT SECTORS IN NORTHERN IRAN

