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Wood Energy Development: An Overview of Legal Issues in the Forestry Sector

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Abstract

Wood energy (WE) development issues encompass all major sectors of development: forestry, energy, agriculture, rural development, environment etc. Forestry related issues encompass WE resources, WE production and distribution (or flows), and WE utilization/conservation, and may also, directly or indirectly, affect alternative development strategies. The issues may be complex, and may need to be addressed by inter-sectoral cooperation and coordination. Cross-sectoral issues may be best addressed by their integration in national development policy and legislation. Sectoral policy and by-laws have to incorporate the priority issues from a national development perspective. Forestry alone should not be viewed as the sector having the sole responsibility for WE development. The issues related to non-forest land based production and optimal utilization of residues and by-products of wood-based industries also deserve the attention of the agriculture and industry sectors, and the rural development sector has an important role to play in ensuring a sustainable energy supply in rural areas. All these issues should be fully analyzed and understood by the energy sector which should assist the responsible sectors by providing an integrated energy development policy to support integrated WE development. Resolution of the legal issues in the forestry sector alone will not overcome the problem of WE development, instead it may further convey the wrong message that this sector is de facto responsible for WE development in totality.

Introduction

Most people, including planners and policy makers in RWEDP member countries, still wrongly perceive that wood energy is produced solely from public forests and/or community lands. This may be true in rare or isolated cases, specifically in areas with low populations and high forest cover (i.e., Bhutan, the High Mountain region of Nepal, etc.). But in most cases, non-forest areas of different kinds - private farms, homesteads, non-industrial tree plantations, etc. - are the most important supply sources of wood energy. This important contribution of non-forest areas has not been properly recognized by development planners in the agriculture sector even today, and the planners in the energy and power sector too fail to acknowledge the contribution of this important source in their energy balances. Most foresters, on the other hand, see the non-forest land only as a potential resource to expand the country's tree covered area, outside the public forest estates. Their priority is usually not woodfuel production, but commercial wood production and environmental preservation and greenery development. Whatever woodfuel is being produced, officially, from both forest and non-forest areas currently is, therefore, only in the form of recovered wood from logging residues or the by-products of industrial wood processing. Although the non-forest area based woodfuel supply accounts for a significant share in total woodfuel supply in RWEDP member countries, and non-forest areas are the principal supply sources of woodfuels for rural households in these countries, national energy balances or economies rarely acknowledge these facts.

A large number of traditional industries and commercial enterprises also depend on non-forest sources for woodfuel supply. But the production potential of this source is not generally known. On the other hand, the production potential of the forest-based supply, which may contribute less than the non-forest supply sources to the total supply in many countries, is assessed periodically. The national forestry agencies are concerned with the projection of supply potential of major forest products in the whole country and/or at regional level, but the information regarding the non-forest-area based supply is generally not known for most cases. Many foresters express confidence in the view that wood energy

consumption has adverse impacts on public forests. And most agriculturists, even although they belong to the sector indirectly supplying a substantial part of the woodfuel (over two-thirds of the total consumption in some cases), and have responsibility for the sustainable development of private farms, homesteads and non-industrial tree plantations, still seem unaware of the contribution of non-forest areas in national energy supply, not to mention the issues related to its sustainable development. People in the energy sector too mistakenly view wood energy as something of the past and only used by the poor. They assume that it will ultimately be phased-out, but in reality the amount of woodfuels used over the years has increased in absolute terms in virtually all RWEDP member countries.

Similarly, the vast amount of wood waste and by-products generated in numerous wood-based industries annually, during the processing/conversion of wood, is also not properly recorded in member countries. These waste and by-products are being utilized for energy not only in the larger industries producing them, but also by different end-users, i.e., rural households, and traditional industrial and commercial activities. The crucial issue in this case too is lack of information. So far, no national system is in place to record the production and consumption of wood waste and by-products for different end-uses. Similarly, how much additional waste and by-products are generated by the numerous scattered small-scale wood-processing units (e.g. saw mills, furniture factories, etc.) is not known either at the country level. No agency seems to be responsible for monitoring these products, since the enterprises run mostly in the informal sector.

During the last two decades or so, many participatory forestry development schemes have come into existence in member countries, mostly under the banner of “social” or “community” forestry development programmes. These programmes follow the strategy of local people’s participation in forestry development, particularly for meeting the basic woodfuel needs of the local people and the fodder needs of their livestock. Substantial progress has been made in mobilizing local communities and individuals in the management of existing depleted natural forests, in the establishment of new plantations, etc., and many NGOs have been instrumental in supporting the implementation of this strategy. In many countries some of these undertakings have already started yielding benefits. But side by side, some new and challenging issues have also been emerging, which are related to local use and commercialization of the forest products derived from the managed community or private forests, as well as from the trees in private farms and non-industrial plantations. The issues are concerned primarily with the local-level distribution of the products derived from these undertakings, as well as the sustainable management of these new resources, including the trade in surplus forest products derived from non-forest lands.

Recently, voices have been raised requesting additional financial allocations for the creation or expansion of processing capacity to make best use of the surplus wood that is produced locally, from community and private forests. And in order to promote private sector investment in its processing and marketing, an open and unhindered flow of all locally produced surplus forest products must be allowed, for their competitive trade. That is expected to contribute to sustainable production as well as promoting private sector investment in non-forest land based forestry development in member countries, under both community and private initiatives.

International agencies like FAO/RWEDP and WB/UNDP (through their joint ESMAP projects) have conducted a number of household level energy studies in selected countries in the recent past. Most of these studies cover specific geographical areas, but a few cover the whole country. RWEDP sponsored studies cover the issues related to woodfuel resources management, flows and utilization, mostly at the local level. ESMAP studies in Pakistan cover all energy sources which are consumed by the urban and/or rural households. Some studies also try to assess the sustainable production potential of wood energy resources, over and above assessment of the energy demand/supply position. These studies, which cover technical, social, legislative, institutional, economic and environmental issues related to wood energy development, have furthered our understanding of the wood energy systems/sub-systems prevailing in the region. These may affect the development of wood energy resources, flows and utilization. Similarly, the development issues of other sources of energy could also be similar or even more complex. Therefore, without adequate understanding of these issues it may not be wise to force new interventions by the sectoral agencies, since promotion of sustainable wood energy development requires the cooperation and coordination of all sectors concerned with national development- forestry, energy, agriculture, environment, rural development, etc. Listing of all these sectoral and cross sectoral issues is outside the scope of this paper, and an attempt has been made only to list the legal issues in the forestry sector based primarily on the findings of the earlier studies.

Legal Issues Pertaining to Wood Energy Development

The forestry related legal issues encompass all aspects of wood energy development: wood energy resources, wood energy flows, and wood energy utilization/conversion. They may also encompass the other alternative sources of energy, both traditional and commercial (i.e., non-woody biomass fuels, oil, electricity, gas, etc.). Development of any type of energy may face a diverse and complex set of issues. Some may be resolved within the concerned sector and others may have multiple sectoral implications and need inter-sectoral cooperation and collaboration. The cross sectoral issues can only be resolved at the national level through appropriate policy and regulatory mechanisms, and concerned sectors will generally have to follow-up by integrating national priorities into their respective laws, regulations, by-laws – all of which are a prerequisite for sustainable development.

Wood energy resources, as mentioned earlier, are not confined only to public lands but are also derived from other non-forest lands, such as trees in private farms, homesteads, non-industrial plantations, etc. It may also be true that in many places the public forests may be the dominant woodfuel supply source for the market, but the bulk of the locally consumed self/freely collected woodfuel by the households is supplied invariably from private and/or community lands. In many places some non-forest area produced woodfuel may also play an important role in local markets, especially where the public supply sources have become scarce and alternative fuels are unavailable or inaccessible. This situation may be found particularly in and around the large towns and urban centers with large populations where both households and traditional industries are dependent on local markets. Therefore, the legal issues related to wood energy resources are not limited to the forestry sector alone, but also have links with the agriculture and other land and tree related development, and the power and integrated rural development sectors.

Prevailing rules and regulations governing land ownership and holding, tree tenure, tree planting and harvesting in private and community lands, transportation and trade of wood and related products, produced in private, community or public forests, do not yet encourage the commercial development of wood energy, or many other tradable forest products. The extent to which these issues may affect wood energy development can vary significantly from one country to another. Besides, there can be many other technical, institutional, social, economic and environmental issues related to forestry and agriculture development which have a direct impact on wood energy development. In some cases, the physical barriers to the existing resources as well as the restrictions imposed on certain species or end-uses might also adversely affect the potential of wood energy development.

An attempt has been made in this paper to list the critical issues revealed by the past studies. Since most of the earlier studies focussed more on the traded wood fuels, their findings tend to ignore the issues associated with the self-collected, freely acquired woodfuels of various shape and sizes. The issues listed below are concerned generally with the control systems in place in different countries, mostly in the forestry sector. These restrictions seem to have been imposed specially to regulate the illicit cutting and smuggling of trees from the public forests and government owned plantations. But they also seem to adversely affect the management, harvesting, conversion, transportation, trade and utilization of wood fuels raised in and produced from the privately owned or community managed non-forest lands. The following paragraphs try to list the major issues under four broad headings: (a) Tree Planting and Management, (b) Harvesting and Conversion, (c) Transportation and Trade, and (d) Conversion and Utilization.

(a) Tree Planting and Management

(Gujrat, India)

In Surendranagar district, Gujrat, India access was open to the local communities to obtain waste lands for tree planting, since the State Government was committed to the development of non-conventional and renewable energy sources. Farm and community forestry development programmes were launched to improve wood energy supply in rural areas and a vast area of waste-land existing in the district (almost one-fourth of the total district area) was leased-out to private individuals to raise trees for energy supply. It encouraged wood and charcoal businesses in the district, under collective agreements. The charcoal business proved economically more gainful than the fuelwood business and also generated additional local employment. The economic gain from charcoal was 14% more than

fuelwood produced from *Prosopis juliflora* trees. The State rule allows farmers to plant *Prosopis* trees on private lands without permission (RWEDP1993a).

Saxena (in RWEDP 1997a) suggests giving a higher priority to forest lands instead of revenue lands for fund allocation for forestry development as these are in comparatively better position in terms of scale, protection and land ownership. The ownership of revenue lands is still considered ambiguous and does not support the present practice of taking over common lands for community plantations by forestry departments. He also suggests that Joint Forest Management areas in India should be reviewed in terms of settlement and usufruct rights, to promote a “care-and-share philosophy” in JFM. From the point of view of environmental preservation, afforestation in degraded lands is recommended. And for private forestry development the issue of land and tree security is addressed. He suggests the abolishment of the restrictive laws on harvesting, movement and sale of forest products to encourage private sector participation in wood energy development. Institutional issues are presented as the main barriers to afforestation in India. The author suggests the need to empower local authorities, proper land and product tenure to local people, and their involvement in decision making. The issue of eucalyptus vis-à-vis other species for short-rotation commercial wood production is also highlighted, favoring the former for supply to local markets and industries, and the latter for household uses in rural areas.

(The Dry Zone of Myanmar)

In Myanmar fuelwood supply sources are different from reserved forests. The Forest Department has established village forests around the rural communities in the plains. It has delineated distinct blocks for fuelwood supply in other areas. But the demand exceeds the supply in some places due to population growth and concentration. To check deforestation, government policy allows only the selective harvesting of fuelwood species in designated areas. The Forestry Department realizes that it alone can not bear the responsibility of meeting rural energy demand by supplying woodfuels and highlights the need for inter-agency coordination in terms of energy development. Not much is known about the private and community initiatives in commercial tree planting and management. Myint (in RWEDP 1997b) groups all types of lands other than forest under the non-forest category, which is traditionally worked under private ownership from the point of view of local level fuelwood supply. It is reported that the multipurpose trees grown in homegardens/homesteads and farm boundaries, naturally growing trees in marginal and wastelands, village woodlots, etc. supply most of the locally consumed fuelwood in rural households, mostly a free supply. In the rural areas of the Dry Zone about 40% of the demand is met from the non-forest land based supply. It is mentioned that there is no restriction from the FD on the extraction of firewood from non-forest lands for local use. A multi-sectoral approach to development was recommended for overcoming the present woodfuel supply problem. Many past reports recommend the promotion of a participatory forestry development strategy in Myanmar and some draw attention to the 1992 Forest Law of Myanmar which allows private entrepreneurs and communities to establish fuelwood plantations. But some identify a gap in forestry extension programmes to implement this strategy. Khiang (in RWEDP 1993b) suggests the removal of the species restrictions that are currently imposed for woodfuel extraction, which he expects will promote tree planting in non-forest lands. Community forestry programmes do not address the needs of the private sector or private lands.

(Peshawar, Pakistan)

Fast growing species like poplar and eucalyptus have been increasingly planted, but fuelwood derived from these species is not favored by consumers, particularly in the industrial and commercial sectors. Only 34% of the supply in Peshawar is met by local production sources. Most of the product is consumed by rural households themselves.

(Cebu, Philippines)

In Cebu Province, where less than 1% land is under forest and the area faces severe soil erosion, people in rural areas (and to a lesser extent in the urban areas) rely heavily on wood and biomass for energy, mostly for household cooking. The bulk of the commercially traded woodfuels in the province are produced from planted trees grown and managed on agricultural lands. Some tree species are restricted for felling without permission. Fast-growing species like *Gliricidia sepium*, *Leucaena leucocephala* or other *planted* varieties from private and *titled* lands, are allowed to be harvested for commercial trade, under two short rotations. Certain naturally growing shrubs and trees species are subject to strict regulation for harvesting and transportation. Multipurpose trees, including fruit trees in private farms

also contribute to local woodfuel production. Widespread tree planting has been induced by the existence of a large urban demand for woodfuels (RWEDP 1993d). Arriola (RWEDP 1996BB) reveals that woodfuels are widely used even in urban areas, where they are supplied from surrounding rural areas. Until recently not much was known about the organization and operation of this supply system.

(Sri Lanka)

The report of the National Training Course on Woodfuel Production and Marketing in Sri Lanka (RWEDP 1998) recommends the provision of state lands on a long-term lease with tree tenure arrangements to anyone willing to plant trees, and suggests the provision of the necessary extension and credit services, including tax concessions.

(b) Harvesting and Conversion

(Gujrat, India)

The government imposed ban on harvesting of trees in public forests has encouraged the production of charcoal on private and community lands. Different end-users were competing for the charcoal available in local markets and the demand was not declining. The procedure established for harvesting of trees for converting into charcoal is controlled by both Revenue and Forest Departments. The procedure to be followed for obtaining tree harvest permit is very complex, cumbersome, time consuming and non-productive. Seven steps have to be followed to fulfill the required formalities of charcoal production and transportation, starting from initial application for obtaining a tree harvest permit, then validation of ownership of the privately raised trees, then felling the trees and converting them into charcoal, then official assessment of the total volume of charcoal produced, then receipt of clearance for loading and transportation, and finally obtaining a transit pass to bring charcoal to the market for sale (RWEDP 1993a). It has to be noted that it is not at all clear under what conditions a permit application might be refused.

(The Dry Zone in Myanmar)

In the Dry Zone of Myanmar, only the species listed as suitable for fuelwood (a total of 23 species) are marked for firewood extraction from designated areas, under permit issued by the Forest Department. Traders have to use only those woodfuel gatherers who are registered and issued identity cards by the FD. Non-forest area contributes to fuelwood supply, mostly with the production of stems, branches, and uprooted stumps. *Prosopis juliflora* plays an important role together with bamboo in meeting the local firewood demand. Charcoal use is restricted, mostly to industries and commercial establishments, and urban households (RWEDP 1993b).

(Peshawar, Pakistan)

In Peshawar City woodfuel is supplied from the mountainous and sub-mountainous natural forests in the adjoining tribal areas and some from adjoining farmlands. Part of the supply also comes from the Punjab province, mostly for tobacco curing. In order to preserve the tribal natural forests, special support is needed to the social forestry development programme to boost woodfuel production (RWEDP 1993c).

(Cebu, Philippines)

In Cebu, Philippines, the DENR Administrative Order does not require a permit for cutting down *planted trees within titled lands* or tax-declared alienable and disposable lands, provided that a certification to that effect from the local Community-ENR Office accompanies the shipment. But in order to be able to harvest naturally growing trees on titled lands for sale, farmers still require a special "cutting permit", and also a "transport permit". The process is very complex, time consuming and cumbersome. First they have to prove the land title and/or tax declaration, indicate the potential volume of trees on their lands, origin and species, which may require initial inspection by an official of the DENR. It is also stated that this system works only occasionally, much of the trade goes unregulated by the DENR. But this does not necessarily imply that most of the farmers are involved in illegal trade of banned species. It simply illustrates the problem in the regulatory system. The author suggests the need for this to be reviewed and amended. And due to uncertain land tenure and short time horizons and a shortage of labor needed to establish and maintain the longer-maturing hardwood species, even if they would yield much higher returns per unit of land. Some charcoal makers in Cebu province may even carbonize the wood they extract at site in difficult terrain and haul the charcoal to roadside collection points (RWEDP 1993d). Some charcoal in Laguna province of the Philippines is derived from the residual wood derived during land clearing for transformation after the commercial log harvest. Some

of the traditional population there also face land tenure problems with respect to their cultivated land (RWEDP 1991).

(West Java, Indonesia)

Even in some places in West Java, Indonesia, part of the locally consumed or market traded fuelwood and charcoal is derived illegally from nearby public forests, and the collection is done by the local poor (RWEDP 1991).

(Northeast Thailand)

In some villages in Northeast Thailand, currently used wood for charcoal making is supplied primarily from privately owned or claimed lands and village commons. Most rural households produce woodfuel for their own use, but the market traded woodfuel may be coming from adjoining areas, hauled and traded by the rural poor (RWEDP 1991).

(c) Transportation and Trade

(Gujrat, India)

The transportation and trade systems prevailing in Gujrat have been explained already. The trade related issues of charcoal, operating in the informal sector are not clearly documented. The price of charcoal is said to be fixed according to its grade. One study (RWEDP 1993a) categorically states that, despite imposition of all these control measures, the controlling authorities generally do not possess information or rarely make use of available information which could influence their policy decisions - a sad reality. Institutionalization of a mechanism for a periodic review of the role, functions, and charges levied by the intermediaries could help improve the marketing efficiency as per the study findings (RWEDP 1993a).

Saxena (in RWEDP 1997a) suggests stopping subsidies on wood sold by the government forestry agencies to industries in order to force them buy the wood produced by the farmers in private lands at economic prices.

(The Dry Zone, Myanmar)

In the Dry Zone of Myanmar, the agriculture based income of the majority of the people is not sufficient for subsistence and they have to look for alternative sources of income, including from the sale of fuelwood, charcoal and other forest related products. The local woodfuel deficit is made up with the supply from surplus districts, lying along the highway and railway lines within 80 km transportation distance from the consumption centers. The FD control stations along the transportation route measure the woodfuel that comes out and charge the royalty fees to traders and registered permit holders. Therefore, the trade in woodfuel is a formal activity in Myanmar. Traders have to make an advance security deposit of a fixed amount to obtain a permit from the FD for fuelwood extraction from the forest. Despite all these control measures, some informal trade in woodfuel was still observed along the supply route. Bamboo fuel does not require extraction permits, hence its annual supply is increasing. Increases in the oil price have increased the transportation cost, consequently the market price of woodfuel (RWEDP 1993b).

(Nepal)

RWEDP (1996a) identifies the 3-6% woodfuel supplied in Kathmandu valley as head- and back loads, and another considerable amount carried by occasional and non-professional traders, mostly as piggyback loads in Nepal. Some of these carriers may also be receiving extra cash income from the woodfuel trade. In many areas of Nepal, head loading of woodfuel and charcoal making for trade do act as a survival safety net to the rural poor and under-privileged members of the society. But it is generally illegal, despite the fact that markets clearly exist for these products, and people dare to take a risk to benefit from the opportunity. In Pokhara, Nepal a shop owner is reported to have made a substantial profit within a few months from the sale in the local market of charcoal illegally made in the local public forest (RWEDP1991).

(Pakistan)

Traded woodfuels in Peshawar City are transported distances of between 200-350 km. The transportation cost of woodfuel accounts for 25% of the retail price. Transport by train costs about half of the truck cost but involves difficult official formalities for obtaining railway wagons and one extra loading and unloading. The market price of woodfuel varies according to species and thickness of the

billet. Local retail sale is on the basis of weight measurement, but the contractors purchase it from the FD on a stacked volume basis. The weight of wood stacks varies considerably according to species, size, moisture content, etc., and the royalty rate of stacks may change accordingly. Charcoal on the other hand is not graded and fetches a uniform price. The marketing system has evolved over a long period of time, but it is functioning well in the informal sector. No attempt has been made so far to enhance the product quality and yield through the introduction of efficient charcoal making techniques. The lower prices of gas and kerosene are fostering the replacement of woodfuel. To reduce the retail sale price of this essential commodity, *octroi* charges and *zila* taxes on woodfuel movement have been recommended for abolition (RWEDP 1993c). Similar findings are presented in other reports from Pakistan.

Haider (in RWEDP 1996b) raises the issues of taxes on wood transport across district/division boundaries in Pakistan, and suggests a country-wide review of them, particularly the transit taxes. In NWFP these amounted to 30-35% of typical tree producer prices for firewood and small timber. They included the District Council export tax (*zila*) and the *octroi* tax, on top of the 12.5% sales tax levied on most retail goods. This is considered to be a large tax burden for a primary commodity like woodfuel with fairly low value added content. Further, the tax system is also reported to be very complex and poorly understood, and therefore subject to widespread abuses. Haider suggests the avoidance of unnecessary government interventions in the working of the privately-run woodfuel and timber markets. It is reported working effectively and with good economic efficiency. Hence, government policy should only maintain the prevailing private market system. Farmers should be allowed to make educated choices on using their land in the most productive and sustainable ways, including for tree planting, with expanded extension and credit services from the public sector. The author also suggests abolishing unnecessary existing subsidies for tree planting, and calls for promoting the woodfuel trade by revising the taxes and permit systems.

(Philippines)

Arriola (in RWEDP 1996b) cites the Philippines Study in six urban areas and states that “wood and charcoal markets operate totally outside the formal regulatory mechanisms of the state. They are classic informal sector activities – a characteristic which is reinforced by the formal illegality of much of the industry.” It is also stated that these markets operate efficiently in most urban areas and link with the fuelwood resources, without significant capital requirement. The study recommends to recognize and legitimize this position and encourage the wood and charcoal markets, as long as they do not adversely affect the environment. The national level biomass fuel scenario does not indicate any immediate shortages at least for the household sector. Poor management and overexploitation of existing public resources in certain areas was however reported. The Cebu study also reveals that the commercial woodfuel trade is subject to regulation by the DENR, despite the fact that cutting of the planted trees on titled lands has been largely deregulated. The basic tool that regulates the trade is the “transport permit”, which controls the shipment of fuelwood and charcoal from rural areas to the city. But it may cover only a portion and the bulk of the supply may be coming, as perceived by many, as an illegal supply to the city, due to existing largely ineffective regulatory mechanism (RWEDP 1993d).

(Thailand)

The forestry administration in the northeastern provinces tries to strictly control woodfuel flow in order to check the widely publicized woodfuel related deforestation. It has discouraged many genuine producers from transporting and selling privately grown wood. Instead they opt to sell it at a lower price locally to collectors and producers who specialize in overcoming the problem of fuelwood transportation and trade (RWEDP 1991).

(d) Conversion/Utilization

(India)

Charcoal in Gujrat is used for domestic, commercial, and industrial applications. Under the present charcoal making method the yield was reported as 27% of the initial volume of wood used for combustion. Households and some industries have stopped using charcoal due to its rising price. In order to sustain this local employment generating activity, policy intervention was considered necessary and focussed on support with financial, administrative and extension service support.

Saxena (in RWEDP 1997a) recommends to abolish the administrative and legal controls over charcoal making from trees on the grounds that it does not lead to deforestation and is labor intensive.

(Myanmar)

Ohn (in RWEDP 1997b) reports the low efficiency of charcoal kilns in Myanmar - only 12%, against 20% in Malaysia, and over 33% in Thailand, by weight. Improvement of kiln design, conversion techniques and quality, as well as size of woodfuel used are needed.

(Pakistan)

The average recovery of charcoal in Peshawar City is about 27% by weight. There is no facility for formal training in tree harvesting, fuelwood preparation and charcoal making at the enterprises level. The establishment of an extension service is recommended in RWEDP 1993c.

Ahmed (in RWEDP 1996b) cites the HESS study of 1991-92 in Pakistan and states that "If an accelerated inter-fuel substitution programme is introduced to reduce the pressure on biomass resources it would place severe stress on the modern fuel supply infrastructure, Woodfuel is an indigenous resource and does not require foreign exchange and it is renewable if managed in a sustainable way. Hence, if the woodfuel is managed sustainably it would be unnecessary to force inter-fuel substitution in the rural areas." What is needed now is a national programme of action towards this direction. The study also suggests that farmers should be allowed to sell wood directly to wood-based industries at higher prices (with the price including the cost of tree felling, conversion and transportation) in order to motivate them in fast-growing, short-rotation tree planting. The government policy should promote, not interfere the present market system.

(Philippines)

The Cebu study reveals that woodfuel use is fairly efficient in the urban area, probably as a result of the highly commercialized nature of its consumption. The potential for development on the "demand-side" still exists. On the "supply-side", local farmers have recognized the presence of the commercial woodfuel demand in the urban areas and have responded to this with innovative and creative tree management schemes. Future continuation of this system or even for its expansion in other places depends upon the policy of the concerned agencies in related sectors (RWEDP 1993d).

List of Common Issues Related to Forestry Legislation

An attempt has been made to compile a bullet-list of the issues that have been commonly observed, documented, or repeatedly expressed in different fora by the experts in the region and is presented below. Many of these issues are related also related to the prevailing rules and regulations in the forestry and related sectors.

- Prevailing rules and regulations governing land ownership and holding, tree tenure, tree planting and harvesting in privately owned and/or community managed lands could significantly affect forestry related development in non-forest lands; they could also affect people's participation and the mobilization of private investment.
- Government imposed restrictions on privately raised and/or community managed tree harvest, transportation and trade does not encourage commercial forestry development in non-forest lands - a crucial problem in most countries.
- The artificial division of responsibility between the forestry and agriculture sectors for tree planting and management (the former is responsible for the forest area and commercial timber trees species and the latter for the trees raised in private farms and homesteads, particularly the fruit bearing and cash crop trees) unnecessarily creates inter-sectoral antagonism if one sector tries to impinge upon the territory of the other. This has also resulted in the creation of duplicate extension services in these two sectors.
- In some countries only the planted species are allowed to be harvested and traded. These are mostly commercially inferior and traditionally unutilized species for heavy construction. Most naturally growing prime species are not allowed to be harvested and traded. This has affected the development of commercial forestry in non-forest lands.

- The agriculture sector's preference for serial and cash crops, and some high value fruit trees does not sufficiently address the need for sustainable land use and production and could also affect non-forest area based woodfuel production.
- Most country legislation allows the harvesting of planted trees for local level consumption (self-use), but an official permit is required to bring the products to other places and markets.
- Technical, institutional, social, economic, and environmental issues, both in the forestry and agriculture sectors affect WE development.
- Physical barriers, inadequate infrastructure, designation of special areas for conservation purposes could reduce local WE availability.
- Government imposed restriction on certain tree species (mostly native high value commercial wood producing trees) and a ban on use of woodfuel for certain end-uses (e.g. brick baking in Bangladesh) may adversely affect commercial WE development.
- Government imposed restrictions and control systems basically aim to prevent illicit cutting and smuggling of trees from public forests and prevent deforestation. But the efficacy of these systems is increasingly being questioned (e.g. especially the blanket rules in many countries in the region that ban the commercial harvesting of standing green trees in public forests, irrespective of their sustainable production potential under scientific forest management plans)

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