Increased forest production in the South – threat or opportunity?

A discussion about some current conflicts between objectives in global forestry
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Foreword

This is the third edition in the Swedish FAO Committee’s publication series. The aim is to arouse interest in issues relating to global cooperation and in particular the work done at the Food and Agriculture Organization of the United Nations (FAO). The previous debate paper highlighted conflicts between objectives in the global food trade. Following the FAO Committee’s decision to continue its publication series along similar lines, this new publication discusses conflicts between objectives in global forestry.

The demand for forest fibre is growing both in Sweden and globally. Problems such as the conflict between the environment and production and the demands for sustainable forest management (SFM) have provoked widespread and ever-stronger resistance to wood production in many developed countries. Some debaters claim that there could be a “timber gap”, i.e. a shortage of wood in developed countries collectively and also in certain growth economies such as China and India. Some developing countries (and some former Soviet states) have the potential to fill this gap - which can be seen as an important opportunity for development. For environmental reasons, for example, it is often not possible or desirable to harvest forest in developed countries to an extent that corresponds to the need and potential. It could then be seen as natural to import more wood and forest products from developing countries but forestry in these countries often faces harsh criticism. In many cases, harvesting methods are used that would never be accepted in Sweden and the rest of Europe, and concern for the environment and biological diversity is not shown to anywhere near the same extent. Some believe that developed countries are protecting their own environment and shifting environmental problems onto developing countries. Developed countries are, however, placing ever-greater demands on forestry operations in developing countries in, for example, international negotiations, and doing so at the same time as the need for wood production in developing countries is on the increase.

In this debate paper, Professor Reidar Persson for the Swedish University of Agricultural Sciences (SLU) analyses the risk of potential conflicts between the objective of fulfilling the need for wood production on the one hand and the objective of sustainable forest management on the other. The paper has been commissioned by the Swedish FAO Committee. Reidar Persson is responsible for its content, which will hopefully spark a debate and further discussion on the issue. I hope that readers will find the paper both inspiring and rewarding.

Ingrid Petersson
President of the Swedish FAO Committee
1. Introduction

For centuries, there has been a fear of a shortage of wood¹ and forest, which has steered policy development in the forest sector. Ideas on “sustainable forestry” emerged to ensure the long-term availability of wood and forest. The demand for wood increased dramatically after the Second World War but disappeared 10-15 years ago despite this fear of a wood shortage, and instead people started to talk about a “timber mountain”. This was true of Sweden, Europe and the world as a whole.

Nowadays, rapid changes affecting the development of the forest sector are occurring globally. The runaway demand in China and India is discussed as soon as the future of forestry is mentioned. Reducing our dependency on oil by using more biomass for energy production is also frequently discussed (cf. Swedish Commission on Oil Independence report – Anon. 2006b). Seventeen billion cubic metres of wood could in theory replace current global oil consumption. Current wood production² stands at 3.4 billion cubic metres but the demand could theoretically be several times higher. Will there be a shortage? At the same time as the need may start to dramatically increase, wood production in developed countries is facing increasing difficulty due, among other things, to other objectives receiving higher priority. Production in developed countries is also becoming expensive and is finding it difficult to compete with production in tropical countries. The problems facing forestry in developed countries could open up new opportunities for developing countries, but forestry in the latter is also encountering difficulties.

Developed countries are demanding sustainable forestry, public participation, better forest legislation, legal harvesting, etc. This causes problems in the short term for forestry in developing countries and often leads to conflict between developing and developed nations.

Traditionally, what are known as “Wood balance studies” have been performed for countries and regions, in which attempts have been made to compare supply and demand (“gap analyses”). It is gradually becom-

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¹ The words “timber” and “wood” are sometimes used synonymously.
² Production of cubic metres of wood is synonymous with harvested volume.
ing clear, however, that such studies have major limitations. The future production of forest products is, for example, affected just as much by political and institutional circumstances as by the physical availability of forest/wood.

The major questions regarding global forest development are briefly discussed in this paper. Will there be a shortage of wood? What powers affect the supply of wood in the world? Do developing countries need to increase their forest production to guarantee future wood supply? Forestry in developing countries faces harsh criticism, however. Developed countries put demands on developing countries to take better care of their forests; they shall manage their forests sustainably, stop deforestation and stop illegal logging. Is it currently possible to achieve these objectives quickly? Are the demands realistic? Do the demands make expansion of the forest sector in developing countries more difficult? There is also an ongoing discussion about what the international forest arrangement and development cooperation can do to improve the situation. What can and should Sweden do to influence development in a positive direction?
2. Summary

The global forest situation is problematic and rapid changes are occurring in both developed and developing countries (e.g. globalization, politicization, urbanization, tougher environmental requirements, certification). The list of goods to be produced grows longer and longer. Many new objectives for the forest sector are being established and these are often in conflict with each other. Forestry is no longer just of interest to the forest sector and the rural population but the urban population and all kinds of non-governmental organisations (NGOs) also want to be involved in decision-making. Developed countries and NGOs also want to exert influence over forestry in developing countries. This new situation is leading to an increasing number of conflicts both on the national and international level between the primary forest sector and other stakeholders. The problems in the forest are currently more economic and social than technical.

The main conclusion of this study is that there is hardly likely to be a universal shortage of industrial wood across the world, nor of fuelwood in developing countries. The global situation does not therefore require us to try and maximize our own Swedish forest production. We would only be doing this for our own sake. Furthermore, production in Sweden probably causes fewer environmental problems than production in many other countries.

Wood production in developed countries is facing ever-greater problems and this is not just due to the conflict between environmental interests and wood production. In a large number of countries, it is also becoming increasingly difficult to recruit workers and many small-scale farmers are beginning to lose interest in exploiting the forest for wood production. The costs are rising and wood production in developed countries is becoming more expensive. It would not be much of a problem for developed countries as a group to become self-sufficient in wood. It is however difficult to realize this potential.

In recent years, the tendency has been for more and more forest production to be shifted to tropical and sub-tropical areas, though not primarily to natural forests. In many developing countries, natural forests have been mismanaged for decades and are becoming less and less interesting for forestry. There is resistance from the market (developed countries) to buying rainforest products. There is also a possibility that rainforest wood may in future become so expensive that it can no longer compete with wood from well-managed forest plantations.

There are many problems in developing countries (e.g. deforestation, illegal logging). Despite this, the demand for forest products is increasing in many developing countries. The forest industry in some of these countries is expanding rapidly - often based on wood from fast-growing plantations.
A great deal is said about exploiting the forest to combat poverty but this strategy has so far met with only limited success. Deforestation is expected to continue, though possibly at a slightly slower rate.

Without investment in fast-growing plantations above all in developing countries, future wood supply may well be in jeopardy. About 25 percent of industrial wood production is currently thought to come from plantations and this figure could well rise to 50 percent within the next few decades. The reason for forestry “migrating south” is not just because plantations grow faster than the forests in the North, but mostly because wood production is currently much cheaper there. The road to greater exploitation of plantations is by no means problem-free, however. Many NGOs are campaigning hard against plantations. If established in the wrong way, fast-growing plantations can also create problems for the local population. International organizations such as the FAO, the International Union for Conservation of Nature (IUCN) and the Center for International Forest Research (CIFOR) are working on a “code of conduct” for plantations. Sedjo’s prophecy (Sedjo 1983) that “forestry will go south” is therefore likely to come true and many traditional forest-rich countries will, at least periodically, face major problems. Until now, development has progressed more slowly than could have been expected bearing in mind the differences in costs. This is due to various contrary forces.

The objective of both the United Nations Forum on Forests (UNFF) and the international forest arrangement is to improve forestry in the world and reduce deforestation. This has not been a success, however. The alternative to continuing with UNFF is to cooperate more with the FAO and the Collaborative Partnership on Forests (CPF). One way would, for example, be to support the FAO’s regional work in Africa and important global programmes.

Constant demands are being put, e.g. by the UNFF, on developing countries to implement a number of measures to solve the problem of deforestation and rapidly achieve SFM (sustainable forest management). Many of the proposals are somewhat unrealistic, however. Instead of imposing so many demands, rich countries should instead show a greater interest in helping developing countries to solve the problems. The majority of rich countries are however mostly interested in investing in symbolic programmes to satisfy public opinion at home. Few rich countries seem to be serious about discussing what can be done. Knowledge and the desire to obtain it seem both to be lacking. The natural course of action would be for Sweden, as an important forest-producing country, to try to help in this regard. Instead, Sweden and its international development cooperation agency, Sida, seem to be on the verge of discontinuing forest assistance completely and leaving it up to countries who destroyed their forests a long time ago and who seldom understand the production aspects.
If many countries were to try and reduce their oil dependency with the help of biomass, the global wood balance situation would change dramatically. Bearing in mind what is written in the Swedish Commission on Oil Independence report (Anon. 2006b), Sweden should invest in supporting greater and sustainable biomass production in developing countries. We and the rest of the world will probably need this. Sweden’s policy for global development (PGD) gives strong reasons for such an investment.

The report strongly suggests that there is plenty we do not know and that our international actions are characterized more by belief than knowledge. Academic research has difficulties in providing the practical knowledge about the global forest situation which Sweden needs to be able to play an active role in the global forest discussion. It seems that an American-style think-tank is what is needed. This working method is probably the best way of providing the practical information we need about the global forest situation.
3. Background

This chapter provides a brief background description covering not only the actual physical situation but also some other trends and ideas that affect development.

3.1 Overview of the global forest situation

Table 1 (p10) gives a global overview of the forest situation. The information comes from the FAO’s “Forest Resource Assessment (FRA)”3 (FAO 2001 and 2006b) and the FAO “Forest Products Yearbook 1998–2002” (FAO 2004). These are the best available statistics although the reader should also be aware that there are major shortcomings attached to them.

Resource statistics are collected by FAO in a dialogue with the relevant countries and they are no better than the countries’ own statistics. Most developed countries perform some form of forest inventory. This could however be old information and dubious inventory methods are sometimes used. Many developing countries have insufficient knowledge about their forests. For the year 2000 (FAO 2001) for example, it is reported that only 22 countries out of 137 carried out regular inventories, 28 had no inventory at all, 33 had inventories for parts of the forest, 34 had an inventory before 1990 and 43 after.

Production statistics are collected by bodies including the FAO with the help of questionnaires. The information about major industries is relatively reliable whilst the information about small industries and production in the forest (e.g. of fuelwood) has major shortcomings.

According to the FAO’s definition, “forest” is defined as wooded area with a crown density of over 10 percent, the trees must be at least 5 metres tall and the surface area at least 0.5 hectares. Plantations are included in the figures (including rubber trees). The FAO definition therefore includes large areas of very open forest. “Closed forest” covers perhaps around 3 billion hectares but if we include shrub-land etc., this figure will no doubt rise to over 5 billion hectares covered with woody vegetation. There is also a lot of wooded agricultural land, which is not counted as forest land, but which is very important for local wood production. The figures given in Table 1 on the next page are therefore not at all exact. These are “living” figures and they are constantly being adjusted. It would actually be better to give a span from the highest to the lowest figure.

According to the definitions used, there is hence more forest in developing countries than in developed countries, but in developing countries there is

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3 References are frequently made to FRA 1990, 2000 or 2005, i.e. the studies providing results for these years.
relatively speaking less forest (27 percent of the land area) than in developed countries (34 percent). Developed countries have three times as much forest per capita than developing countries. Forests in developing countries are mostly found in sparsely populated areas. Deforestation is greatest in Latin America and in Africa. There is also major deforestation in Asia, but this is concealed by the large areas said to be planted each year. The surface area of the forest in developed countries is increasing somewhat. The majority of plantations are to be found in Asia. These figures are very unreliable, however (see Chapter 6). According to the production statistics, most wood production occurs in developing countries (when we include fuelwood). About 70 percent of industrial wood is however produced in developed countries. Collectively, developed countries have a positive trade balance regarding forest products whilst developing countries have a substantial trade deficit. It is mostly Asia (China, Japan) that has a major deficit. In North America, the United States has a deficit and Canada a major surplus.

The main emphasis of this report is placed on discussing the role of the

Table 1. The global forest situation (FAO 2001, FAO 2006b, FAO 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>Forest area</th>
<th>%</th>
<th>Per capita</th>
<th>Change 1</th>
<th>Plant. 2</th>
<th>Volume</th>
<th>Prod.</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Million hectares</td>
<td></td>
<td>Hectares</td>
<td>Million hectares</td>
<td>Million hectares/year</td>
<td>Billion cubic metres</td>
<td>Million cubic metres</td>
<td>Billion USD</td>
</tr>
<tr>
<td>Developed countries</td>
<td>1,696</td>
<td>34</td>
<td>1.3</td>
<td>+1.1</td>
<td>61.5</td>
<td>189.6</td>
<td>1,333</td>
<td>+5.9</td>
</tr>
<tr>
<td>Europe</td>
<td>188</td>
<td>34</td>
<td>0.3</td>
<td>+0.8</td>
<td>14.7</td>
<td>27.3</td>
<td>412</td>
<td>+1.9</td>
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<tr>
<td>- Sweden</td>
<td>27.1</td>
<td>66</td>
<td>3.0</td>
<td>0</td>
<td>0.6</td>
<td>2.9</td>
<td>67.5</td>
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<td>Russia</td>
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<td>50</td>
<td>6.0</td>
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<td>17.3</td>
<td>89.1</td>
<td>174</td>
<td>+3.6</td>
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<tr>
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<td>471</td>
<td>26</td>
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<td>16.2</td>
<td>60.2</td>
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<td>Japan</td>
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<td>0</td>
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<td>3.5</td>
<td>15</td>
<td>-9.6</td>
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<tr>
<td>Oceania</td>
<td>162</td>
<td>20</td>
<td>6.8</td>
<td>-0.2</td>
<td>2.6</td>
<td>9.5</td>
<td>54</td>
<td>+1.1</td>
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<td>Developing countries</td>
<td>2,174</td>
<td>27</td>
<td>0.4</td>
<td>10.5</td>
<td>125.1</td>
<td>196.7</td>
<td>2,051</td>
<td>-12.7</td>
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<td>Africa</td>
<td>650</td>
<td>22</td>
<td>0.7</td>
<td>-5.3</td>
<td>8.0</td>
<td>46.5</td>
<td>613</td>
<td>+0.7</td>
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<tr>
<td>Asia</td>
<td>524</td>
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<td>0.14</td>
<td>-0.4</td>
<td>105.1</td>
<td>31.0</td>
<td>990</td>
<td>-13.1</td>
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<td>LA</td>
<td>965</td>
<td>47</td>
<td>1.7</td>
<td>-4.7</td>
<td>11.8</td>
<td>117.9</td>
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<td>-0.4</td>
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<tr>
<td>Oceania</td>
<td>35</td>
<td>65</td>
<td>4.0</td>
<td>-0.2</td>
<td>0.2</td>
<td>1.3</td>
<td>9</td>
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<tr>
<td>Total</td>
<td>3,869</td>
<td>30</td>
<td>0.6</td>
<td>-9.4</td>
<td>187</td>
<td>386.4</td>
<td>3,384</td>
<td></td>
</tr>
</tbody>
</table>

1 Shows change in forest area between 1990 and 2000. - shows deforestation, + indicates increased area.
2 Figures from FRA 2000
forest as a wood producer (often expressed in cubic metres). Many other products and services also come from the forest, of course.

- “Non-wood forest products” (NWFP). Here we can mention food (e.g. game, roots, fruits, honey), resins, medicines, bamboo, cane, bark, paint and animal feed. Such products are of major social and economic significance in certain countries.
- Positive environmental effects. Here we can mention carbon sequestration, protection against erosion, effect on water retention, soil improvement, better micro-climate (e.g. wind).
- Protection of biological diversity. Most of the planet’s biological diversity seems to be in our forests. If forest disappears so do species.
- Recreation. In developed countries, the forest can often provide more income from recreation than from wood production.

Attempts have been made in a number of countries to estimate the value of these products and services. In many countries, the value is higher than wood production. There is however often a tendency to try to achieve as high values as possible. More information on these products and services can for example be found in Sands (2005) and Persson (1995).

### 3.2 Will there be a shortage of wood?

Foresters have been expecting an imminent shortage of wood for a long time, but no such shortage has occurred other than on the local level. The fact that we have not had any problems with supplies of industrial wood\(^4\) over the last twenty or thirty years is partly due to:

- Forest resources having often been underestimated. There has been (and still is?) more wood than we thought.
- Forestry has reached new areas. “Mining” also occurs, leading to stocks of old forest being emptied without any consideration for the future.
- Forestry has become more intensive and provides a higher return. We talk about “better management”.
- Increasing areas of fast-growing plantations have been established in tropical and sub-tropical regions.
- The wood is put to increasingly better use. The recycling of paper is a prime example. Waste from sawmills is also used in the fibre industry. Industry can use smaller sizes, poorer qualities and more hardwood. Particle board is being used increasingly instead of sawn timber. Studies show that in the United States, 40 percent more products are obtained per unit of wood used in industry compared to 50 years ago (Ince 2000).

\(^4\) Fuelwood in developing countries is discussed in Annex 2.
• Improved and cheaper transport, allowing wood to be transported over longer distances. Increasing oil prices may well change that, however.
• If an imbalance were to occur, it would be adjusted using the price. There has not been any long-term increase in the wood price, however.

It is uncertain what significance these factors will have over the next twenty to thirty years. “Mining” should become more difficult, more intensive forestry could become more difficult in many places and there is perhaps not as much scope for improving how the wood is utilized. New factors that may affect development will no doubt emerge.

3.3 Discussion on some “hot” social and economic factors

In recent years, a large number of changes affecting what happens in the forest sector have occurred. The forest sector, as well as society as a whole, finds itself in a process of rapid change. Important economic changes include:

• Globalization. More and more production in developed countries is being transferred to “low-wage countries”
• New markets are gaining in importance (e.g. China, India). Asia may well become the new hub of the world economy.
• Many countries give subsidies to forests and the forest industry. The expansion of fast-growing plantations and the forest industry has been important in many developing countries. Even Canada has indirectly subsidized expansion of the forest industry and Ireland awards grants to forest plantations.
• Certification of forestry has become an increasingly important means of competition.
• There is rapid urbanization both in developed and in developing countries and this influences more and more people’s attitudes to the forest.

The forest and forestry have also been politicized and the forest sector is increasingly affected by the political scene both nationally and internationally:

• Sustainable forest management (SFM) is being called for. Environmental organizations and the urban population wish to have a say in how the forests are managed (see Chapter 7).
• International processes are working to improve the forest situation. Over the last 15–20 years, there have been many countries wanting to establish a forest convention (see Chapter 8).
• Most countries are placing ever-higher demands for forest protection and the setting-aside of nature reserves.
• The EU is exerting increasing influence on forest policy in Europe and is also trying to influence forestry in developing countries in different ways.
• Changes in forest policy are occurring in many countries. In several African countries, for example, ideas on local participation have been incorporated into forest policy.

There have long since been conflicts in connection with exploitation of the forest and these seem to have become more intensive. The following conflicts are particularly relevant just now:

• Production versus the environment/SFM.
• Urban versus rural.
• Developing versus developed countries. Developed countries are, for example, demanding that developing countries take care of and protect their forests. For their part, developing countries want compensation for lost income in return.
• Many developed countries also claim that “the forest is a global resource” and as a result, some developed countries, not least those that are forest-poor, want to be involved and exert influence over forest policies in other countries. Forest-rich countries, such as Brazil, are opposed to the idea, however.
• Consumption of forest products is often depicted as something very negative. The pulp and paper industry has a particularly bad reputation in this regard. Paper advertising may seem to be a waste of resources, but the use of the majority of other forest products increases human welfare. Many are also better than the alternatives from an ecological point of view.

The causes of conflicts on the national level vary from country to country. Some of the most important causes are discussed briefly below:

• The forest generates many products and it is often difficult, or impossible, to combine production of different products (e.g. wood and “virgin forest”).
• The forest has many stakeholders who often come into conflict with each other.
• There are often disagreements about the user rights to forest products. These can be different for different products and also change over time. For example, the value of the forest may increase and this often leads to changes in the user rights, often to the detriment of the weakest groups.
• There can be conflict between the central and local level.
• There can be conflict between the short and the long term.
• There is often a great deal of money tied up in the forest and many wish to be involved and share it.
3.4 Some of the demands placed on developing countries

Much of the international debate is characterized by developed countries consistently demanding that developing countries take better care of their forests. Such demands are naturally aired during discussions about development assistance to the forest sector but they also arise in many other contexts (e.g. at international meetings) and are often the result of intensive lobbying by interest groups in donor countries. Some of the most common demands are:

- Stop deforestation/destuction of the rainforest (see Chapter 7).
- Introduce sustainable forest management (SFM) (see Chapter 7).
- Stop corruption and illegal logging (see Chapter 7).
- Prioritize poverty reduction (See Chapter 5).
- Draw up plans. To satisfy donors, developing countries must prepare a large number of plans, including what are known as Poverty Reduction Strategies Papers (PRSPs). The forest and environment sector also face demands to draw up various plans. The concept of the Tropical Forest Action Plan (TFAP) emerged in 1985. After many alterations, this idea has now been remodelled into the National Forest Programme (NFP). Related programmes have been or are being demanded for the environment, biological diversity, combating desertification, etc. These plans specify requirements for public participation, gender analyses, decentralization, better forest legislation, improved/strengthened administration, environmental impact assessments (EIA), assessment of social effects, modifications to user rights, local management, a better market, privatization, etc.

Many of these requirements are justified in themselves but the issue is whether it is always realistic to specify them and whether it has any positive effect at all. Some of these requirements are discussed in more detail later on. They are mentioned here since they have a bearing on relations between developed and developing countries.
4. The forest situation in developed countries

To begin with, considerable effort was put into analysing the forest situation in different regions as a basis for a discussion in the event of a shortage or surplus of wood. Annex 1 summarizes the material on developed countries. A few general comments are made below.

The somewhat sketchy analyses referred to in Annex 1 do not suggest any major shortage of wood in developed countries in the short term. The United States, Japan and western Europe have major deficits whilst eastern Europe, Russia and Canada will continue to have a surplus. Oceania seems to have difficulty in realizing its potential. Collectively, developed countries should not need to face any major deficit unless circumstances change dramatically. The development in developed countries is however characterized by rapid change.

A problem in the majority of countries is the conflict between forestry and the environment. This conflict often relates to felling in old forest. Much of what is done in the forest sector also covers large areas of land and is clearly visible. It is therefore easy for NGOs to attack forestry. Some NGOs even oppose plantations. They want to preserve the forest as natural forest and plantations (exotic species, monocultures) are therefore inappropriate. In the United States, for example, NGOs are demanding the introduction of very low-output management systems. Of course, such forest would not be as much of an eye-sore as a clear-felled area, but production in natural forest would have to be reduced. Conflicts in the United States have led to reduced harvesting and a rise in imports. New Zealand no longer exploits its natural forests and obtains almost all its industrial wood from plantations. The trend is the same in Australia, where hard battles have been fought between forestry and NGOs. In Australia, there is also opposition to, for example, the use of exotic species and monocultures in plantations. The problems facing Canadian forestry are partly due to conflicts among various forest users. Environmental considerations obviously reduce the scope for wood production in many European countries, although the conflicts in Europe seem to be less severe than might have been expected. This may be because much of the forest is owned by small-scale farmers and this leads to many urban dwellers having personal contact with foresters. It can be more difficult to attack small-scale farmers than large forest multinationals. In addition, wood production is a rather insignificant phenomenon in many countries and not particularly intensive. A lot of effort is put into producing goods and services other than wood. Four countries (Finland, France, Germany and Sweden) are
responsible for about 50 percent of the wood production in western Europe. Eastern Europe is in an earlier stage of development and environmental conflicts seem so far not to be so serious.

It seems there is no fear of a wood shortage in Europe any longer. The area of forest, volume and growth are increasing and there is even talk of a “timber mountain”. This development obviously makes it easier for politicians to introduce all kinds of restrictions on the production of wood. Politicians often try to show their ability to take action by establishing production targets (e.g. referring to reserved land). This has occurred in many countries and a problem can arise if circumstances were to change and attempts were to be made to remove restrictions in certain areas.

Opposition to forestry often stems from a resistance to change. This may be opposition to cutting down old forest, or to planting forest an open area, which once was forest. In the United Kingdom, for example, there is opposition to planting trees on moorland, which is basically mismanaged forest land. In Sweden, there is widespread approval of supporting animal grazing in order to keep the landscape open and it is possible to obtain compensation for preserving an open agricultural landscape (thereby keeping the forest at bay). At the same time, we want developing countries to preserve and restore their forests. In developing countries, however, open landscape often provides more income than virgin forest. The above example demonstrates an occasional lack of logic in people’s reasoning. One thing is certain; there are no absolute truths.

The forest sector is also facing economic problems. Many countries already have and will in future have problems recruiting labour. This has long been the case in Japan and may also affect other countries like Sweden. Private owners in, for example, Japan, are showing a declining interest in exploiting the forest for wood production. The forest is believed to have other values. The power of owners is also diminishing in many countries and the majority (the urban population) can restrict forestry rights.

These factors lead to increasing costs. Forestry in developed countries is finding it difficult to compete with “low-cost countries” when it comes to producing wood. In post-industrial societies, recreation, environmental services and biological diversity are becoming more important than wood production. “Multi-use forestry” has become an important objective for the forest sector since the 1960s. Ideas about “zoning”, i.e. using some areas for e.g. recreation/nature conservation and others for intensive forestry, are starting to emerge, however. New Zealand is the most obvious example of this model.

Nowhere near the full potential for wood production is being realized in many developed countries due to increasing costs and all kinds of conflicts. Wood production in developed countries is facing a dark future. Within a few decades, large forest areas may well be used to a limited extent for some form
of production. The opposition to forest production that exists in many countries seems however not to affect the expectations for a continued high and rising level of consumption. Discussions are currently ongoing, for example, about generating more energy from biomass. There is a conflict here.

The alternative to production in developed countries is of course production in developing countries. Do the prerequisites exist for importing hundreds of millions of cubic metres of wood from developing countries in the event of the forest sector in developed countries continuing to face difficulties? This could be a golden opportunity for many well-placed developing countries.
5. The forest situation in developing countries

Annex 2 provides a description of the forest situation in different geographical regions as well as a description of the fuelwood situation. Fuelwood is the most important forest product in developing countries and the claim is often made that there will be an ever-increasing shortage of it in the future. The scope for exploiting the rainforest is also discussed in detail since this is a subject of constant debate.

Fuelwood is the most important forest product in the majority of developing countries. A serious shortage of fuelwood in most areas seems unlikely. There is also an increasing demand for forest industry products in many developing countries. Demand in e.g. China and India may well increase dramatically over the next twenty years or so. Most developing countries are expected to become net importers of forest products, some countries will probably build up competitive industries, however. Most of the raw material will in these cases come from plantations.

It is proving increasingly difficult to exploit natural forests for the production of industrial wood, since opposition to it is considerable and it is difficult to convince the market that everything has been done properly and legally, which is seldom the case. In natural forest areas, there is widespread conflict between forestry and agriculture, and forestry is often the weaker party. User rights to the land are also a common problem and there are demands to set aside large areas as reserves. There are many conflicts regarding natural forest. The future of forestry in developing countries will mainly be in plantations (see Chapter 6).

A great deal is said and written about using the forest to combat poverty. The forest took the Swedish rural population out of poverty, so this phenomenon is not new. The forest has, as yet, not played the same role in developing countries. This is not because it would be impossible from a practical point of view but because many factors in developing countries are against the interests of the poor. Income from the forest is normally accrued to those who are already rich and there is a general unwillingness to change these conditions.

The problem always associated with forestry in developing countries is deforestation. Most of what is said relates to the forest in general and not just to the rainforest. According to FRA 2000, gross deforestation in the tropics was 15.2 million hectares per year. Since an estimated million hectares is naturally afforested, “natural” net deforestation was 14.2 million hectares. Replanting

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Wood used to produce charcoal is often included in published figures
occurred on 1.9 million hectares. Total net deforestation in the tropics was therefore 12.3 million hectares. In non-tropical areas, the forest increased by 2.9 million hectares. Global net deforestation should therefore be 9.4 million hectares (or 0.25 percent). Global net deforestation in 1990 was put at about 11 million hectares (13.2 million hectares in developing countries). Net deforestation between 2000 and 2005 (FRA 2005) is put at 7.3 million hectares (11.4 million hectares in the tropics). It is possible to interpret these figures as a tendency towards a decline in deforestation, but there are so many question-marks that it is perhaps best to say that at least there doesn’t seem to be any increase.

The causes of deforestation are primarily the conversion of forest into agricultural land (both for subsistence farming and for commercial agriculture). Expansion of the road network and forestry are also often linked to deforestation. It is obviously not possible to say anything for certain regarding how land-use will develop over the next twenty or thirty years. If the economy is allowed to dictate the situation, gross deforestation will continue in the same vein and perhaps even increase. Net deforestation will probably decrease due to more area being used for plantations.

Illegal logging and trade have emerged in recent years as a very hot subject regarding the forestry activities of developing countries (as well as eastern Europe to a certain extent). Forestry has long since been plagued by corruption and criminality. This was a large-scale problem in Sweden at the end of the nineteenth century. Forest management rules are not followed, areas that are supposed to be protected are brutally overexploited, the authorities are bribed to turn a blind eye to such illegalities, etc. NGOs provide very high figures relating to what is illegally harvested both in the south and the east. It is stated, for example, that 50 percent of logging (50 million cubic metres) in Indonesia is against the applicable rules and that causes a loss for the government of 1 billion USD per year. The World Bank has estimated that the authorities lose a total of 10–15 billion USD per year on account of illegal forest activities.

There are many other factors influencing the development of forestry in developing countries. These include corruption, urbanization, ineffective governments, demands for nature reserves, conflicts, macro economics, the informal sector, decentralization, international processes, local participation, the role of the government, etc. Some of these factors are discussed in more detail in Chapter 7.

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6 Main source: www.illegal-logging.info, Brack 2005
6. Fast-growing plantations

6.1 The current situation
Fast-growing plantations can currently be found in both developing and in developed countries (e.g. the US, New Zealand, Australia). According to FRA 2005, there are 140 million hectares of plantations (of which 78 percent are productive). Between 2000 and 2005, the total area of plantations should have increased by 2.8 million hectares/year. FRA 2000 puts the area of plantations at 187 million hectares. All the statistics on plantations are very difficult to penetrate. In the first attempts at describing plantations in the 1960s and 1970s, efforts were made to show the total area of man-made forests. It wasn’t difficult to describe plantations in tropical regions since it was often a question of monocultures of exotic species. It was, however, often difficult to say what was planted forest in northern areas. In Sweden, for example, millions of hectares have actually been planted, but a few years after the planting, it is difficult to see this. The FAO is now trying to introduce the category of “planted forests” for Swedish-type plantations. This comes under “semi-natural forests” to a certain extent. “Plantations” make up a category of their own but including basically only exotic species. According to the FAO, only plantations of contorta can be termed proper plantations. These ideas caused a great deal of confusion in FRA 2000, confusion that still seems to prevail. There is some logic in the ideas, but reading between the lines, the implication is that plantations are often seen as something negative. Natural forest is seen as superior to plantations.

The fact that many national figures on area of planted forest are overestimated merely adds to the confusion. According to a study at the Swedish University of Agricultural Sciences (Pandey 1995), only 70 percent of the reported land area actually existed (it is probably only 50 percent). This estimate is used in FRA 1990 to adjust the official figures on planted area. Furthermore, the growth figures given for planned projects and in trend studies are often far too high. There is probably not more than 20-30 million hectares of really successful plantations. One known example is Ara Cruz in Brazil. Much of the planted forest area is otherwise in a very poor condition. Table 2 gives some information about plantations from a few different sources.

Plantations in many countries often started as state-owned plantations, or at least received some state support. Much has been privatized in recent times. The authorities are currently looking for incentives to encourage private interests to invest in plantations.

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Roger Sedjo is a famous prophet of plantations and he, like so many others, has played with the figures relating to what plantations can produce (Sedjo & Botkin 1999). An interesting detail in the abovementioned study is an estimate as to where the wood comes from just now:

- 30 percent from old forest
- 10 percent from exotic species plantations
- 24 percent from other plantations
- 36 percent from secondary forests.

### 6.2 The potential

Plantations (or “planted forests”) in e.g. northern Europe is really just another way of saying intensive management. A key aspect to discuss when talking about plantations is the fast-growing plantations often of exotic species, which can be found in tropical and subtropical areas. These are expected to influence – and already have influenced – global forestry. Growth of over 100 cubic metres/year has been ascertained in trials. On a commercial scale, the growth in eucalyptus plantations is seldom higher than 25 cubic metres/hectare/year. In pine plantations in New Zealand, a span of 18–24 cubic metres/hectare/year is reported. The rotation period in e.g. eucalyptus plantations can be as low as 7 years whilst pine plantations often have a rotation period of 15–25 years.

The major potential lies most often in planting exotic species since these are often subject to less attack from disease and pests than domestic species. Exotic species have a “honeymoon period”. Domestic species in the tropics often cannot be planted in closed stands since they can be vulnerable to far too much attack.

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**Table 2: Estimated area of plantations (million hectares)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Abare/JP (1999)³</th>
<th>FRA 2000⁴</th>
<th>FRA 2005⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1.4</td>
<td>8.0 (3.4)</td>
<td>13.0</td>
</tr>
<tr>
<td>Asia</td>
<td>11.2</td>
<td>115.9 (58.8)</td>
<td>64.9</td>
</tr>
<tr>
<td>Europe</td>
<td>47.1</td>
<td>32.0 (...)</td>
<td>27.5</td>
</tr>
<tr>
<td>North and CA</td>
<td>24.2</td>
<td>17.5 (16.8)</td>
<td>18.8</td>
</tr>
<tr>
<td>Oceania</td>
<td>2.5</td>
<td>3.2 (...)</td>
<td>3.8</td>
</tr>
<tr>
<td>South America</td>
<td>7.5</td>
<td>10.5 (9.4)</td>
<td>11.3</td>
</tr>
</tbody>
</table>

³ Industrial plantations
⁴ Total area. Industrial plantations in brackets.
⁵ All plantations.

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Average growth in Sweden’s forests is about 4 cubic metres per year.
The potential does not primarily depend on the fact that species like eucalyptus always grow faster than domestic species. High growth often requires mechanical scarification, fertilization and mechanical weeding. In other words, it is a question of very intensive management. The plantations we are talking about here are more akin to agriculture than forestry.

Much of today’s industrial wood (1.6 billion cubic metres) comes from forests that produce an average of 1–1.5 cubic metres/hectare. Nearly 1.5 billion hectares would need therefore to be managed using this “method”. The argument put forward is that all industrial wood could come from one planted area of 150 million hectares if we assume an annual growth rate of e.g. 10 cubic metres. This means that 4–5 percent of the total forest area would produce the required amount of industrial wood. An increase in area of 1–2 million hectares per year would cover the estimated rise in demand. Perhaps not all wood can come from plantations but most of it can.

6.3 Trends

Plantations are now said to take up about 4 percent of total forest area but provide 25 percent of industrial wood production (Abare/JP 1999). Plantations are of major importance in many countries. They provide 100 percent of the industrial wood in South Africa and 99 percent in New Zealand. In Brazil, they provide an estimated 60 percent of industrial wood production.

The transition to plantations is expected to continue. According to one study (ABARE/JP 1999), plantations will provide 44 percent in 2020 and 46 percent in 2040. It is possible to arrive at all kinds of figures and it is no doubt difficult to give an accurate estimate. All forecasts predict increased use of wood from plantations, however.

6.4 Advantages

There are many reasons to change from natural forest to plantations. One philosophical reason is that forestry, in the same way as agriculture and animal husbandry, will eventually have to change from a “collector’s economy to management”. In many places, it is becoming increasingly difficult to exploit natural forest and ceasing to use it for wood production is often considered to be of value in itself. The scope for exploiting old forest is decreasing, environmental requirements and conflicts are increasing and this leads to greater costs. There are also demands for “multi-use” in natural forests which can be difficult to satisfy and lead to increasing costs.

There is plenty of scope in plantations to gradually reduce the costs whilst the trend in natural forests is the opposite. Originally, the idea was to establish fast-growing plantations around an industry. By reducing transport costs, it is possible to transport wood profitably to different places around the globe.
Global warming can also be a reason to rely more on fast-growing plantations. Natural forests and trees that require 100 years to mature can meet with problems at the end of the rotation period. Fast-growing plantations on the other hand can be relocated as the climate changes (or rather suitable species can be brought in as the climate gradually changes). Plantations also have the potential to rehabilitate degraded land and can also be of considerable value when it comes to restoring biological diversity.

It is often claimed that establishing plantations is a way of “saving” natural forest in the tropics but this is not so certain. Natural forest is not disappearing because of a shortage of wood but rather because there is a shortage of food, i.e. there is greater potential in agricultural production than in forest production. It is sometimes claimed that plantations are often established after natural forests have been cleared, which would lead to greater deforestation. It is also claimed on occasion that if plantations take over wood production, natural forest will lose value and be converted into agricultural land. The assertion can also be made here that natural forest can seldom compete with the agricultural alternative. Forest will probably disappear anyway in places where conditions are favourable for agriculture. In conclusion, there are many arguments to suggest that fast-growing plantations will increasingly take over.

6.5 Problems/criticism
Swedish people often feel that plantations are in principle a benevolent venture (cf. Vi Agroforestry Programme [Vi-skogen] and the Red Cross) Many NGOs are however running a campaign against plantations (e.g. Anon, 2000, Anon. 1999). A summary of the most important arguments (and some counter-arguments) are given below.

**In general**

- Fast-growing plantations only produce wood. Natural forests provide “non-wood products”, biological diversity and various other positive “goods” and services.
- The idea of producing fibre from agricultural fibres (such as kenaf) instead of from trees (Ayres 1993) is sometimes put forward. This will be more expensive than using trees, however. Trees can be produced all year round (stored as standing timber) whilst agricultural crops are harvested only once a year and have to be stored for longer periods. The transport costs may also be higher and the environmental benefits are questionable (Sedjo & Botkin 1997). Why is constant intensive agricultural production (annual disturbance) better than intensive wood production? Intensive agricultural production is often felt to give rise to more problematic environmental effects than forest production.
**The environment**

- Plantations often replace natural forests, which are felt to be of greater value. Plantations are often not considered to be forest.
- Plantations are believed to use a lot of water. This is completely natural in cases where the plantations produce a lot of wood. A permit is required to establish plantations in countries where water is scarce (e.g. South Africa).
- Most of the time plantations are monocultures, which is seen as very negative. Trials have been carried out with mixed plantations. But this doesn't seem to be worth the effort (FAO 1995). Most of the criticism centres on the fact that plantations often consist of exotic species. This is often considered very negative.
- Exotic plantations are felt to run a greater risk of being affected by diseases and insect attack. This has happened on occasion, but as mentioned above, the problem is often more serious if native species are used (at least in the Tropics). Pesticides have sometimes to be used, however. One commonly mentioned dilemma is that exotic species can start to spread and become a problem (natural forests can be adversely affected). This has occurred with the Prosopis juliflora bush (from Mexico) in India, although in certain areas the bush has solved the fuelwood shortage.
- Plantations are believed to suck the soil dry of nutrition. It is inevitable that fast-growing trees will consume a lot of nutrition. It is also often claimed that plantations lead to irreversible changes in the soil. The use of heavy machinery can lead to compaction of the soil. These issues have been studied for a long time, but they seldom cause to any serious problems. If nutrition is a problem, fertilizer must be used to solve the problem.
- It is often claimed that plantations cause more erosion. Thick plantations on slopes can certainly cause greater erosion. The problem can be solved with better planning, however. Eucalyptus, for example, should be planted on relatively flat ground.
- Plantations have less biological diversity than natural forests. Absolutely - but that's the whole point of them!

**Social issues**

- Plantations are often established on sub-standard agricultural land and this reduces agricultural production. Plantations mostly provide less employment than agriculture.
- Plantations can lead to conflicts about user rights. The state often gives companies permission to plant on land that has been used by the local population for generations. This often leads to people being displaced from an area.
- The local population cannot use the planted areas for a time. They cannot for instance be used for grazing. There is often resistance to plantations since the local population is afraid of losing the rights to exploit planted areas (e.g. for gathering fuelwood or grazing).
6.6 Technical problems that can slow down development
In 1983, Roger Sedjo (Sedjo 1983) wrote a report in which he predicted that “forestry will go south”. The direction has become clear but development has perhaps not been as fast as Sedjo and many others predicted, since many counter-forces have been at work. Some counter-forces that may influence development are discussed below.

Many of the problems discussed can occur as a result of poor contact with the local population and NGOs. Some of them should be easy to adjust to. There are also a number of technical problems that can delay development and cause difficulties.

Estimates put the area available for plantations at between 345 to as much as 760 million hectares, but this is probably a flattering figure. All land in developing countries is probably used, regardless of how degraded it is. We can therefore always ask whether land that does not cause major conflict is available and whether the price of such land will increase.

Naturally, the problems are primarily in areas used in some way for agricultural production. One alternative might be to plant in natural forests, although, as mentioned above, this is difficult. It might be possible to reduce conflicts if degraded forest was used instead of agricultural land. The areas must however be accessible, the terrain must not be too difficult and there must be enough labour and scope to extract what is produced.

It is sometimes claimed that the best areas have already been taken care of and that future establishments would have to make do with poorer and more expensive areas. Political and economic developments mean, however, that new areas are becoming “safe” (e.g. Mozambique and Angola).

Despite all the praise for fast-growing plantations, many of them, as mentioned above, have failed (Persson 1995). The reason is insufficient investment in management which leads to low survival, conflicts with the local population. Monitoring is rare which is why we don’t know if the plantations have been successful or not, grazing and fire are inefficiently controlled, unclear user rights lead to problems. Furthermore, in state-owned plantations, no-one feels responsible, there is no market or no demand for the goods produced, the aim of the plantation is unclear and corruption can eat up management resources. All these problems can be solved, however. In addition, people often try to establish plantations in areas with far too little precipitation (e.g. under 1000 mm) whereas natural regeneration is much more appropriate in such areas.

6.7 Potential of farmer plantations
Problems and conflicts easily emerge if strong economic interests go in and create large-scale industrial plantations in an area. From a social point of view, it would be much better if farmers could start to grow trees as a commercial crop (Arnold 2001). This would probably be somewhat more expensive and more difficult than having large concentrated plantations adjacent
to factories, but there are large social benefits to be gained from such an approach. Commercial attempts have been made in South Africa, the Philippines, Brazil and India and the scope has been studied by the International Institute for Environment and Development (Mayers, J & Vermeulen, S, 2002). It is common to have agreements between a particular industry and farmers (or group of farmers). These are known as “outgrower schemes”. The landowner provides land and labour whilst the industry offers expert help and marketing opportunities. Private individuals or groups can naturally start plantations without having secured marketing opportunities but this involves a fair amount of risk. This is an area where organizations such as Sida could make a major contribution.

6.8 Planted Forest Code
For a long time, organizations such as FAO, CIFOR and IUCN have been writing reports and trying to explain what we know about the problems and benefits of plantations. What is fact and what is myth? This has not been particularly fruitful since old myths continue to be used above all to criticize plantations. The FAO, in partnership with a number of other partners, has therefore drawn up a “Planted Forest Code”,9 (FAO 2006a). This includes seven pages of detailed guiding principles to be followed when planning a plantation. The headings are listed below:

1. Institutional principles
   a. Good governance
   b. Integrated decision-making and participatory approaches
   c. Enhanced organizational capacity

2. Economic principles
   a. Recognition of value of goods and services
   b. Promotion of investment
   c. Recognition of the role of the market

3. Social and cultural principles
   a. Recognition of social and cultural values
   b. Maintenance of social and cultural services

4. Environmental principles
   a. Maintenance and conservation of abiotic environmental services
   b. Conservation of biological diversity
   c. Maintenance of forest health and productivity
   d. A landscape approach

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9 Regulations governing “planted components” and “plantations”
The code is very ambitious but it remains to be seen whether all unnecessary conflicts can be reduced. The drafting of the code demonstrates the strength of the FAO. It was a timely initiative and the code represents an opportunity to reduce the improprieties that occur in conjunction with large-scale industrial plantations.

6.9 Conclusions
Much of the criticism levelled against plantations is not without foundation. The ecological problems are seldom as serious as they are made out to be. Indeed, most plantations have had only limited problems. It is important to try to make it clear that fast-growing forest plantations should be considered as agriculture. In principle, there is no difference between a wheat field and an eucalyptus plantation. One could possibly say that a wheat field is worked slightly more intensively since it is harvested every year and not just once every 7–15 years.

The social problems are the most serious. Changing from poor agricultural land or poor forest land to forest plantations involves changes to land use. Such changes often cause problems for the weakest social groups and the employment rate often falls. It is important to ensure that problems are kept to a minimum but in brutal reality, it is often difficult to solve all the problems. Neither are all the problems necessarily the fault of the plantation-growers. Many actors take their chance and try to exploit a change to their advantage. An important concept in all discussions about the establishment of fast-growing plantations is “participation”.

The problems and benefits of fast-growing plantations have been summarized in the CIFOR report “Fast-Wood Forestry, Myths and Realities” (Cossalter & Pye-Smith 2003). In brief, the authors say that the effect of fast-growing plantations mostly depends on how they are managed. Poorly planned and implemented fast-growing plantations can cause significant social and ecological problems, but when they are well planned and implemented, they can provide large volumes of wood along with many ecological and social benefits.

Nevertheless, it would be surprising if virtually all forestry were to move south. The north is home to forests that contain valuable wood and these cannot be moved. Harvesting can be further rationalized and natural regeneration after felling need not be expensive. There is also infrastructure, technology, knowledge, research, industry as well as a great deal of fallow agricultural land. There is therefore ample reason why many trend studies do not believe that more than 50 percent of production can be assumed to come from fast-growing plantations. This can of course be interpreted as Swedish forestry still having a future.

Should “carbon forests” be established on a large scale in order to reduce CO₂ levels in the atmosphere, however, the situation could change radically.
Roger Sedjo (1989) estimated that a plantation area of 465 million hectares could reduce the rate of increase of CO₂ to 0 over the course of the 30–50 years these plantations would need to mature. “Carbon forests” can however be seen as a somewhat illogical solution. It would seem to be more logical to establish plantations to produce bioenergy. There is really no upper limit to this and all available forest land could be used. Forestry is of course not the only option. A lot of bioenergy can also be produced from agricultural crops, such as maize and sugar cane.
7. Demands on developing countries

It would seem that developing countries could realize their potential for forest production more effectively. The problems are mostly political and international cooperation is still to a large extent characterized by conflict between developed and developing countries. Developed countries are very anxious to “save the rainforest”. There is also an interest in reducing the loss of biological diversity since tropical forests are said to contain over 50 percent of all the world’s terrestrial species. The following demands are put on developing countries in order to reach these desirable goals:

- Stop deforestation
- Stop illegal logging and trade
- Introduce sustainable forest management (SFM)

Some aspects of these demands are discussed below.

7.1 Stop deforestation

The extent of and reasons for deforestation have been briefly described in previous chapters. The effects of deforestation have not been discussed, but there are many reports painting a very black picture of what deforestation will lead to. Many of these are produced by environmental organizations and other eco-warriors and there is tendency towards narrow-mindedness and exaggeration. Current developed countries destroyed their forests in the 18th and 19th centuries. When developing countries now find themselves in the same phase of development, there are strong environmental organizations trying to stop similar devastation of forest land. There is strong opposition to the establishment of oil palms in Indonesia and to soya bean cultivation in Brazil. Television is constantly showing programmes about terrible, voracious people who destroy the rainforests. What is right?

Bearing in mind the situation which developing countries face, one might find it difficult to oppose the orderly conversion of forest into agricultural land. West Malaysia and Costa Rica have, for example, become rich as a result of such conversion. Some of the current developments in Brazil might also gradually turn out to be positive for the inhabitants. In many places, however, forest and land are being brutally exploited to the advantage of only the rich.

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10 When did anyone point out that Djurgården and Östermalm, two up-market residential areas in Stockholm, are actually ravaged forest land? Or that two million hectares of good agricultural land are destroyed in the world every year?
The best scenario would almost certainly be if land use in the tropics could be stabilized. But how can such a scenario be realized in a world where 30,000 children die each day of malnutrition and easily curable diseases? Historically, the deforestation problem in developed countries has solved itself, or rather been solved by economic development. The changes occurring in the forest sector of developing countries are nowadays so fast, however, that most of the forest may well have disappeared before “development” has a positive impact. Are there any short-cuts to take as an alternative to general “development”? This question is discussed in an article by David Kaimowitz (2000). He sees three possible ways forward:

- Work with aspects such as relative prices, transport costs, farming subsidies, employment outside forest areas, energy policy, macroeconomic reforms, trade policy, etc. Changes in these areas could perhaps reduce “unnecessary” deforestation. But how many countries are prepared to establish reduced deforestation as their main objective?
- A command and control approach. Such an approach has never been tried and the scope for success would probably be extremely limited.
- Payment of environmental services. If the local population and governments were paid handsomely for protecting the forest, a great deal of unnecessary deforestation would probably disappear. Scope for this seems however to be limited in the vast majority of countries.

None of the abovementioned methods would appear to particularly encouraging. In the long term, development would seem after all to be the most reliable way of reducing deforestation. Donors often say they want to help reduce deforestation, but such claims are often symbolic actions rather than indicative of a serious approach. Most donors have, for example, cut down on their support to agriculture and rural development. Much more could be done if their intent were serious. Few developing countries can manage to rapidly reduce deforestation on their own.

### Stop illegal logging

A few statistics on illegal logging are given in Chapter 5. It is easy to be dismayed over this, but we should remember that illegal logging is a symptom of something else that is wrong in society. Attempts are being made to come to grips with the problem. In typical forester fashion, it is often a question of technical solutions such as “wood tracking”, and the belief of certain countries in “laws and regulations” as the solution to most of the problems. There are many international initiatives (e.g. FLEGT = Forest Law Enforcement Governance and Trade). Is it possible to gain control over illegal logging in dysfunctional societies using technical solutions and new legislation? There
is a risk that much of this will be merely symbolic action. However, this is a problem that has a serious impact on forestry worldwide.

It increases the profits for many actors and leads to less scrupulous elements being attracted to the industry. Illegal logging also reduces the price of wood by 7–16 percent, according to American studies (Brack 2005), and this creates problems for responsible forestry. It may also be why many developed countries want to do something about the problem.

Perhaps there are enough actors in both developed and developing countries with an interest in bringing the situation under control to make something positive happen. FLEGT and similar initiatives can perhaps be a helping hand along the way. Placing demands is not enough, however. It is important to understand what is happening in reality, and where necessary to intervene and provide long-term support to weak countries.

The problems of illegal logging, mismanagement of the forest and deforestation are by no means predominantly the fault of developed countries. Countries such as Taiwan, Malaysia and China have, for example, franchises in Africa and often break every conceivable rule. In many cases, it is simply a case of reckless overexploitation.

### 7.3 Introduce SFM

Demands for SFM have been discussed in previous chapters. Sustainable Forest Management (SFM) became a much-talked-about concept around 1990. Inspiration came from the Brundtland Report (WCED 1987), United Nations Conference on Environment and Development in Rio 1992 (UNCED) and various processes for Criteria and Indicators for sustainable forestry (C&I). Certification also became a concept. Foresters have naturally claimed that SFM has been around for centuries, but they actually mean sustainable yield (primarily in cubic metres of wood). SFM on the other hand means that forestry is to be economically, environmentally/ecologically, socially and sometimes even culturally sustainable. In the various C&I processes, over 100 different indicators were drawn up to begin with on what was required before a forestry operation could be deemed sustainable. Using the C&I processes, it would be possible to monitor whether the situation was improving or not. SFM (and C&I) has been a cherished concept within the international forest arrangement (IPF/IFF/UNFF).

Different actors naturally define SFM differently. In developed countries like Sweden, a compromise acceptable to the majority is mostly reached. Achieving a compromise in developing countries is much more difficult, however. The game rules are often established by players in developed countries and neither do many actors in developing countries have any interest in achieving SFM. The demands are also very tough. For example, running a franchise according to the rule-book in Cameroon requires substantial
development assistance (Smouts 2003). Demands are also placed on advanced “horticulture” in poorly functioning communities. If similar demands were also specified in Sweden, we would probably also have problems. We can ask ourselves whether SFM is currently a realistic goal in the majority of developing countries. The things needed to succeed with SFM include (Persson 2004 a & b, Njuki et al. 2004):

- **A democratic system, free press and civil society.**
  In undemocratic societies, there is nothing to control power and this normally results in the abuse and squandering of resources. A dictator can of course force through some form of SFM but whether this is sustainable is debatable. Everything can fall apart when the dictator is overthrown. Dictatorship also often leads to them making a profit at the expense of those who are weaker. The most important aspect is probably a free press so that those who violate the law can be held accountable. If this is to work, a certain amount of transparency into public administration is also needed, since irregularities can otherwise easily be concealed. Systems also need to be in place so that an incompetent regime can be removed under reasonably orderly conditions.

- **An efficient administration and good governance.**
  Many developing countries complain about insufficient investment in forestry and the forest industry. Few developing countries have an administration, however, that can handle large investments. In the majority of developing countries, the administration must be strengthened and significantly improved to handle the current level of investment, and it is often also necessary to improve the ethics of those working in the administration. Poor ethics often - but not always - depend on low salaries. If the administration is weak, it is probably naive to have too high hopes of SFM.

- **Investment must be worthwhile.**
  Forestry is primarily an economic activity and income must be made from the sale of goods and services. It is not possible to run forestry activities as some kind of charity in the long term. It is often said that development assistance is needed for SFM, but if this is the case, we are not talking about SFM but rather about non-SFM (i.e. unsustainable forest management). Development assistance can probably be of value in the transitional phase between non-SFM and SFM. In rich forest areas, there is no shortage of money. On the contrary, there is too much money in forestry in these areas and this often leads to corruption. It is a fact that non-SFM (i.e. mining) is more economic for the individual than SFM and this means that there must be an administration that has a certain amount of strength and that can control companies who are just out to make quick, easy money. If the market is left to its own devices, SFM will be conspicuous in its absence. Related to the above, there is
limited value increment in the forest sectors of many countries. If investors obtained a better yield, more could be invested in forestry and this would also provide greater incentive to at least obtain “sustainable yield”, which seems to be the first step towards SFM.

- **Controlling corruption.**
  This factor probably causes the most problems for forestry in many developing countries. If corruption cannot be brought under control, there is very little hope left.

- **Participation.**
  Decisions are often taken that go against the interests of the local population or of some other important actor. It is difficult to succeed unless the majority of actors accept the ideas. Employing a top-down approach, as was previously the rule in the forest sector, is generally unsuccessful. It is certainly possible sometimes to achieve SFM by issuing orders from above. But is it sustainable? The best scenario is probably when strong actors, including e.g. the collective of small-scale farmers, accept existing ideas about SFM. This can be seen as part of democracy. Involving stakeholders in the work can make more things happen and even make things cheaper. This is one of the principles behind e.g. “village forestry”.

- **The macroeconomy must be reasonably balanced.**
  The economies of many developing countries are in total disarray and such a situation makes it difficult to promote understanding of the need for SFM. The forest is seen as a cash cow, which should be exploited to alleviate certain problems.

- **Commitment and political will.**
  Without strong commitment and a will to achieve SFM from governments and key authorities, the scope for achieving SFM would seem extremely limited. The majority of governments feel they have more important things to do than devote time to some woolly concept called SFM. Few countries seem to have a clearly expressed will as to what is to be achieved. Ideas about SFM are often something forced upon them from the outside.

- **Institutions and legislation.**
  Efficient legislation must be in place as well as a judicial system able to enforce it. This is often lacking.

- **Clear user rights.**
  Unclear user rights are often one reason why the forest is abused. If owners can’t manage to control their rights, the forest becomes just an unregulated
area of open access. Unclear user rights also often lead to serious conflicts among various actors, which can render any attempts to achieve SFM impossible. Clear user rights don’t necessarily always lead to better management of the forest, but unclear rights most of the time (or always) cause problems.

- **Stable rules.**
  Rules and personnel are always changing in many countries and it is difficult in such an atmosphere to create interest in long-term investment in the forest sector. There is a major risk of it becoming merely a search for quick and easy profits.

- **The will to learn and change.**
  Many forest administrations are very conservative and there is often a resistance to changing existing rules and trying something new. Many are only looking after their own interests and it can be difficult to achieve SFM in such an environment.

- **Clear roles.**
  There should be clear roles for different actors. It is often the case that a central forest authority creates rules for forestry, is responsible for practical forestry and for control. Having several roles like this can eventually create problems.

- **Contact with other sectors.**
  A great deal of effort has been put into creating good forest policy but this effort has often been in vain. What happens in the forest sector is often determined to all intents and purposes by agricultural policy, transport policy, exchange rates, etc. Close cooperation with other sectors is therefore needed, but contact with them is often poor. The forest sector is often the weak party when it comes to land use in many countries.

- **The good society**
  There is a theory that SFM is difficult to achieve unless there are certain characteristics of “the good society”. Certain minimum standards, level of education, security and healthcare are all needed. If the people lack the essential things in life, SFM can be seen as something rather peripheral.

- **Peace.**
  War and conflicts are common in a large number of countries. Discussing SFM in such conditions is not particularly meaningful.

A shortlist of 15 points that are more or less essential in order for SFM to be successful is given above. Not all of the conditions are absolutely necessary.
but should most of them be lacking, the chances of achieving SFM are extremely limited. Only a few developing countries have the right conditions for SFM. Such conditions do however exist in developed countries, the question is whether there is the will.

What conclusions can be drawn from this? Many ideas about and demands for SFM in developing countries are actually very naive. It is useful to discuss whether Sweden, 100 years ago, would have been able to meet all the demands now being placed on developing countries. Sweden was probably a better-functioning society at that time than many developing countries are nowadays. Despite this, we would still have found it difficult to meet many of the demands.

7.4 Discussion
Three areas in which developed countries put demands on developing countries have been discussed above. It is not the case that these demands are in any way incorrect. In the long term, forestry in developing countries should be able to meet these demands, but it is hardly realistic to achieve this in the present day. Forestry should be reduced to a minimum in many developing countries and the emphasis – in e.g. development cooperation – should be put on creating the right conditions for SFM (including law abidance). It may sometimes be better to support the build-up of a forest authority and the judicial system rather than support the establishment of e.g. forest reserves or forest companies. Unfortunately, forestry cannot be stopped in weak countries. What can be done about forestry in dysfunctional societies? This is something of a balancing act – what right do we from developed countries have to engage in finger-pointing based on our own values? Any efforts must be directed at increasing knowledge and insights into the importance of the forest for the country in question and for the long-term well-being of its own people.

Deforestation is only to a limited extent linked to forestry, so better forestry would not make so much of a difference. The motivation for reducing deforestation is weak in many countries, but an optimist can hope that development in due course may give rise to balanced land use. Less deforestation often costs developing countries money in the short term. Perhaps it is unrealistic to expect interested developed countries to compensate them for this loss directly, but perhaps we could expect those who place the most demands to show some interest in helping to achieve well-balanced land use. In recent years, donors have shown only a passing interest in rural development, agriculture and forest issues.

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11 Many developing countries see the demands as covert trade barriers.
8 The international discussion on forest issues

Deforestation in the tropics became a hotly debated issue in the 1970s. The Tropical Forestry Action Plan (TFAP) was initiated in 1985 to combat deforestation. The official aim of the TFAP was to reduce deforestation, but since deforestation is mostly due to agriculture, infrastructure development and macroeconomics, the results were poor. The FAO, which had the main responsibility for the TFAP, also caused problems and the plan in its original form disappeared and was replaced by new ideas (now the National Forest Programme). We learnt a lot from working with the TFAP.

Ideas about a global “forest convention” were hatched in the run-up to the UNCED in 1992. The idea was to draw up a convention to save the rainforest. Developing countries were opposed to this and the discussion shifted from “tropical forest” to “all types of forest”. It was not possible to negotiate a forest convention before the UNCED. Instead, we received the non-binding “Rio Principles”. There was considerable antagonism between North and South both prior to and during the UNCED and this was still apparent in the Commission for Sustainable Development (CSD). No system was developed to monitor the Rio Principles and many developed countries continued to press for a forest convention. It was decided in 1995 to discuss forest issues in the Intergovernmental Panel on Forests (IPF). A large number of hot issues were debated in the IPF (1995–1997), but most time and effort was put into deliberating over the wording of documents. A great deal of effort was, for example, put into finding non-committal wordings about how SFM should be financed and how the issue of a forest convention should be dealt with. No agreements about the really difficult issues were reached and they kept on being discussed in the Intergovernmental Forum on Forests (IFF). The problems were the same as in the IPF and the ideas put forward by several countries about a forest convention fell on deaf ears. The IFF (1997–2000) was basically a repeat of what had already been done in the IPF. After a long negotiation in IFF4 (2000), it was proposed that discussions be continued in the United Nations Forum on Forests (UNFF). The UNFF was to have a two-week meeting every year until 2005, at which time a decision on what was to happen next would be taken (e.g. whether negotiations on a forest convention should begin). After delays, the last UNFF meeting was held in February 2006. The end result was that we should continue for ever, or until 2015 at any rate. It may be worth discussing this result a little.

• As many as 14 meetings (in Geneva and New York) have been held for a total period of six months. This has basically been a discussion between the EU, the United States, other developed countries, Brazil, and the G-77 Chairman. Many developing countries take no part at all in the discussion.

• No fewer than 270 proposals for action have been agreed during the meetings.

• Informal cooperation between 14 international organizations, whose mandate includes the forest, has emerged during the process (Collaborative Partnership on Forests, CPF). This is seen as the most important outcome of the International Arrangement on Forests (IAF). The FAO chairs the CPF.

• Costs for the meetings can be estimated at between 30 and 60 million USD.

• The aim of the exercise is becoming less and less clear for those countries that are not totally consumed by the idea of a forest convention.

• There are many international organizations working with forest issues. It is difficult to see what the value added of the UNFF is.

In the run-up to UNFF 5/6, alternatives for the future were discussed. There were some countries that would have preferred to discontinue the UNFF, even though none of them wanted to take the initiative to do so. One proposal was to arrange meetings with the CPF and UNFF in conjunction with the COFO (The FAO Committee on Forestry). This would have several advantages:

• The forest sector would have a forum in which to discuss pressing issues. The forest is discussed and will in the future be discussed in many different fora and this worries many forest officials. But the COFO is still the largest forest meeting in which forest organization directors-general take part. Combining this with the CPF and UNFF would enable a “global forest week” to be held every second year.

• This would be more effective in terms of both time and money. In 2005, for example, the COFO and UNFF held meetings just a few months apart and both arranged ministerial meetings with similar agendas.

• A combined COFO/CPF/UNFF meeting would be more likely to achieve all the aims often referred to in the International Arrangement on Forests.

• The COFO and UNFF currently compete against each other. There is no joint planning of the agenda, something that would be essential at a combined meeting.

At the UNFF 5/6, however, it was decided that the UNFF would continue in more or less its current guise at least until 2015. A few very “soft” objectives were formulated for 2015. A meeting is to be held every second year. Some
work at the regional level may also be done in cooperation or in competition with the FAO’s regional forest commissions. It was also decided to draw up some form of non-binding code of conduct (referred to also as a “voluntary instrument-agreement-code-international-understanding-thing”). This will be the third time this has been done. The material already exists in the Rio Principles and in the IPF/IFF Proposals for Action.

All ideas aimed at coming up with something better therefore failed, despite the existence of alternatives and the fact that the UNFF must be classified as a failure. The ideas about a forest convention have scuppered any constructive work within the IPF/IFF/UNFF. This is not a technical issue but more akin to a religious matter and there are both “believers” and “non-believers”. Some feel, for example, that the forest is a “global common” and that it therefore should be governed by an international law. A non-believer can of course ask himself what a signature at the bottom of a paper means in practice. It seems that some environmental conventions and treaties do actually work, e.g. the Ozone Protocol, whereas others quite clearly don’t. Those that do work seem to have quite a clear aim and it is possible to agree on the need for a convention before a detailed discussion on the content of such a convention takes place. Is this possible with regard to the forest? Many believe that reduced deforestation is the natural objective, but it may be sensible to convert part of the forest in many countries into agricultural land. We can hardly agree - in e.g. the UNFF - on how the forest is to be used more or less. Furthermore, it seems both strange and illogical to have a special convention for one land use sector. The natural thing would be to try to draw up a convention on land use as a whole, if indeed one is felt to be necessary.

It is possible to classify the countries that participate in IPF/IFF/UNFF in accordance with their stance on a forest convention. This attitude also affects how they play the game in the UNFF:

**Developed countries**

- Strongly against a convention. This is particularly true of the United States. Since the US has no forest policy for all its forests, it cannot sign a forest convention.
- Strongly in favour of a convention:
  - Countries such as Finland, Canada and Spain feel that a forest convention would be in their national interest.
  - Countries such as the Netherlands, Germany and Switzerland have no obvious self-interest in a convention. They are, however, consumed by the idea of “saving the rainforest” and believe that a forest convention would achieve this aim.
  - Sweden, Denmark, the United Kingdom and Norway now belong to the lukewarm or pragmatic group.
Developing countries
- Strongly against a convention (e.g. Brazil, India).
- Few seem to be strongly in favour, but some might be interested if it led to more scope for securing development assistance or to less trade restrictions.
- Lukewarm, pragmatic or absent. A group that has increased in recent years.

The above carries a certain amount of weight when we try to understand the reasons for failure. Some of the most important reasons for failure are summarized below:

- Opponents to a convention (the US, Brazil) would prefer to see the UNFF continue in its current, toothless form. They can then be relatively certain that troublesome decisions will not be taken in organizations such as the CBD (Convention on Biological Diversity), UNFCC (UN Framework Convention on Climate Change) and perhaps not even in the FAO.
- Some claim that the US want a worthless arrangement as proof of the UN’s weakness.
- Those who want a forest convention obviously would prefer to have a negotiation committee. If this is not possible, it is better to let the UNFF continue. Their interest in improving the UNFF may be limited, since a failed UNFF can be seen as grounds for a forest convention.
- There are only a few countries with strong opinion on a convention and the UNFF and it is these countries that steer development of the forum. They can block all attempts at a meaningful compromise (e.g. a FAO/CPF/UNFF meeting).
- Many countries/delegations have invested so much in the IPF/IFF/UNFF over the last ten years that it is difficult for them to recommend winding it up.
- The UNFF secretariat in New York obviously wants to continue and expand.
- The UNFF is said to be the process that can put a stop to deforestation. This is technically wrong but nevertheless an incontrovertible fact. It is politically impossible for countries to officially pull out of such a process.

New ideas are emerging as to how to achieve a “voluntary agreement on a legally binding instrument for the forest”. Canada is pushing this issue, with some support from a few Central American countries. Canada seems consumed by the idea of a legally binding instrument and has obviously given up the hope of any such instrument being successfully negotiated in the UNFF. We can only speculate on what lies behind Canada’s actions. Perhaps the country fears a certification system in the Forest Stewardship Council
mould. The demands have a tendency to constantly increase. Canada is also a federation of provinces and a forest convention might possibly strengthen the federal level. There are also many unsettling conflicts with environmental interests, local populations and indigenous peoples. A forest convention would establish a common denominator which would reduce the demands compared to the current situation. One could always refer to the fact that the demands in the convention are being met and one would know which rules applied.

The EU is a very complicated negotiating partner and membership restricts Sweden’s scope for taking constructive initiatives in the UNFF. There are some countries within the EU that find it difficult to let go of the idea of a convention. These have made things difficult not only for the EU but for the entire UNFF. The Netherlands wish to strengthen the international rules and would possibly like to see a forest protocol under the CBD. Germany is completely consumed by the idea of “saving the rainforest” and seems to believe that signing a piece of paper is the solution. Germany obviously wants to awaken the interest of indifferent countries by signing a piece of paper. Germany wants the voluntary code of conduct to be as binding as possible through some form of signatory. This will give rise to problems in the negotiations.

It is obvious that the UNFF is going to continue as before. There is no longer any scope for reforming the UNFF so the forum will continue with “sustainable chit-chat” over the next ten years or so, further damaging the forest sector’s reputation. The situation might be further exacerbated by competing initiatives from e.g. Canada.

A well-functioning UNFF, or an efficient international arrangement, could work to solve some of the problems discussed in this report. The UNFF doesn’t function at all, however. What can we do to solve the current situation? The most sensible thing to do seems to be to support the FAO and CPF in the best way possible. The FAO is still the most important global forest organization and pursues both normative/standard-setting and operative activities. The organization has the potential to improve the COFO on its own. It is also important to strengthen the regional work done by the FAO and CPF. In partnership with the FAO and the African Academy of Science, Sweden has already started a project aimed at strengthening African countries in the international forest arrangement, and also building up realistic awareness about what can be done. Sweden could also support the work done by the FAO with the Regional Forest Commission in Africa. It must be possible to assuage the damage currently being done by the UNFF. There is so much that needs to be done, but most energy is currently put into a process whose main objective seems to be to prevent anything sensible being done.
It would be natural for a forest-rich country like Sweden to give increased assistance to the forest sector in developing countries in order to solve some of the problems described above, but Swedish development assistance to the forest sector is gradually disappearing. This has in part a historical explanation. Many of the forest projects begun in the 1960s and 1970s met with problems. The problems were probably no greater than in other sectors but some forest projects gained a poor reputation (cf Bai Bang). Nevertheless, Sweden possessed significant skills when it came to forest sector development cooperation for quite some time. For example, Sweden had a leading and pioneering role in the transition from industrial to social forestry.

Forest issues were at times very popular since certain narratives provided good arguments for increased support to the forest sector (e.g. fuelwood shortage, village forestry, deforestation). There was a tendency however to blow the crises out of proportion (and make the solutions look better than they were) and it’s now payback time.

Environmental interests at the end of the 1980s created greater problems for the forest sector (and the agricultural sector) than for the majority of other sectors. Environmental impact assessments were of course always to be performed and it is almost always possible to find something to criticize in forest projects. Development in general can also lead to deforestation. When forest projects were discontinued, it was difficult to start new ones. Over the last 15 years, many forest projects have been discontinued but no new long-term ones have been started outside eastern Europe.

Within the forest sector, we learnt that small-scale traditional forest projects often encountered problems. Reliable user rights to the land, local management, participation, contact with other sectors, good leadership, etc., were shown to be important success factors. We have learnt a tremendous amount about how rural communities work from the various forest programmes we have implemented. Forest sector development often requires development of society in general. The forest programmes were therefore expanded and revamped or incorporated into rural development or natural resource management programmes. Sweden took a leading role in this transition process. The interest in agriculture and rural development diminished however and this obviously had an adverse impact on the forest as well. Exist-

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The World Bank encountered the same problem. Within the bank, it is said that forest projects account for 2 percent of the money but give rise to 98 percent of the problems.
ing forest components of these broad programmes often got lost during negotiati
gations. Sida increasingly began to canvas support among politicians and the
general public by focusing on popular subjects. Forestry and agriculture were not among these and also lacked strong lobby groups, resulting in them often being outcompeted by more popular subjects. Development assistance also began to avoid weaknesses and problems as a response to all the criticism levelled at it. The number of objectives in the projects had a tendency to increase.

Development assistance in general finds it difficult to learn and even though the forest sector has probably been better than most other sectors, there is still a lot to improve. We can also see that the forest sector has often been over-critical of itself and too analytical and not, as other sectors have done, fought tooth and nail to defend all projects that were already underway. We have constantly been on the look-out for something better.

A political awakening seems now to be underway; agriculture may once again come into fashion and this may also rub off on the forest sector. The Swedish resource base has however been seriously undermined in recent years. Between 1960 and 1980, Sida put considerably effort into creating a resource base for the forest sector (and agriculture). This is now starting to wear increasingly thin as many of the first generation have retired and only a limited number of younger people are committing themselves to the cause. Remarkably, Sweden has never managed to create a strong resource base at its universities, and the blame for this can be apportioned to both Sida and the universities themselves. Nowadays, Sida often has to bring in expertise from the United Kingdom and the United States even within what can be termed “Swedish specialities” such as social forestry and land conservation.

Large-scale, multi-million dollar forest projects are hardly relevant in today’s current climate. There is seldom a lack of money in the forest sector but often a shortage of knowledge. The pressing need is for strategic projects that help to forge national willpower and stimulate reform. The forest projects started in the 1960s and 1970s encountered problems, due in part to the fact that there was no sensible national policy. Forest inventories, statistics, forest research, think-tanks and policy development are examples of areas where efforts are currently needed. Such projects are often small-scale, however, and seldom awaken the interest of bureaucrats. On the other hand, it is possible to support regional and global programmes of this type in cooperation with e.g. the FAO. The term that should characterize forest sector development cooperation is “learning”. The “Lessons learnt on SFM in Africa” project, implemented by the KSLA in partnership with the FAO and the African Academy of Science, with the support of Sida, can be seen as a successful model.

Any new start regarding support to forest programmes must be accompanied by strong political will. In the present situation, It is important to begin
rebuilding a resource base. Such a base is needed not only for development cooperation but for Sweden as a nation. It is not just a question of increasing the number of people interested, but it is even more important to improve skills and knowledge, something which cannot be realistically achieved without intensive cooperation with the country’s universities. Sweden needs a certain amount of its own knowledge about how the world functions. It is ultimately also a question of our ability to influence development on the global forest policy level.

Proposals to increase efforts within a sector are often countered with the argument that Sweden supports what developing countries ask for. Partner countries are however well aware of in which areas they expect enquiries and in which areas it is worth asking for cooperation. Forestry (and agriculture) has not been among these. Donors have tried to solve some of the problems connected to development cooperation, including too many donors, too many projects, donor control, etc., by introducing harmonization, sector support, budget support and decentralization. These modern methods have previously been to the disadvantage of the forest sector, but it need not be so if the political will is strong enough. Cooperation with international organizations can, for example, be increased. Despite this, however, there is a need for national competence to be able to cooperate with international organizations effectively.
10 Final comments

The inquiry that formed the basis of Sweden’s “Policy for Global Development – PGD” (SOU 201:96 – “A fairer world without poverty”) made reference to the following:

“The committee proposes that Swedish efforts shall to begin with concentrate on a selection of these global utilities: the fight against infectious diseases, the fight against corruption and money-laundering, conflict-prevention measures, guaranteeing safe water supply and sustainable management of the world’s climate and forests.”

Despite this recommendation, nothing has happened as regards the forest. Indeed, Sida’s support to the forest has continued to decline. The Commission on Oil Independence (Anon. 2006b) has just recently presented its report. It recommends, among other things, that the Swedish forest should make an important contribution in the transition to an oil-free Sweden. Growth in the forest shall increase by 10-15 percent by means of more intensive management. Bearing in mind all the past conflicts regarding the forest, the realism of this recommendation can be brought into question. It can also be questioned whether it is best to “burn” up this extra production. Wouldn’t further processing in the forest industry be better from a socioeconomic perspective? Biofuel/bioenergy could be purchased from countries with better conditions for production. One main objective is perhaps to build up Swedish competence in the area, however.

Can’t the Policy for Global Development (PGD) be taken as a reason for increased support to the build-up of the forest sector in developing countries? In the spirit of the PGD, it would be natural if Sweden/Sida were to also put serious effort into supporting the build-up of sustainable biofuel production in developing countries. Despite our own production, we will no doubt need to import biofuel further down the line. Most developed countries are also worse off than Sweden when it comes to being able to produce biofuel. It may well therefore be appropriate to support the build-up of biofuel production in those developing countries well-placed to produce it. This can also be seen as a good development opportunity for many developing countries. Production needs to be sustainable (SFM) in order not to create major conflicts. It is also unlikely that many people in developed countries discuss whether the limitations on land exploitation which we try to force upon developing countries are sustainable in the long term. We must also perhaps discuss our own limitations. Shouldn’t Sweden once again be a country that gives support to the build-up of the forest sector in developing countries?
The United Nations Forum on Forests (UNFF) should work to improve the global forest situation and introduce sustainable forest management (SFM). It seems, however, that the main objective is currently to hamper any attempts to do anything constructive. Some countries (including the US) want a toothless forum, over which they have full control and which they can refer to when necessary. It is more difficult to have control over e.g. the CBD, UNFCCC, FAO and certification processes and unpleasant surprises may crop up. It is perhaps time to accept that the FAO is the most important international forest organization and support its work with forest issues in different ways.

Developed countries have in a historical perspective destroyed their forests and the capital in them has often been transferred to someone else. As developed countries have developed, the forest has to a large extent come back. Now, when developing countries are in principle using the same methods, they are met with harsh criticism from countries that destroyed their own forests a very long time ago (e.g. The Netherlands, the UK, Ireland and Denmark). Developed countries that destroyed their forests in the 19th century seem not to have encountered any insurmountable problems. Of course, we can always claim that there are major differences. Greater biological diversity in tropical forests is often given as one reason. In many countries, the forest is also being destroyed without it leading to development since the income is normally accrued to the rich. The age of “dubious forest dealings” in Sweden during the 19th century also had its fair share of losers, however. Such a development would not be possible today. All groups in developing countries have their advocates in developed countries.

There is sometimes a tendency for us to transfer values in our post-industrial societies to countries whose populations, to a great extent, still find themselves at the subsistence stage. SFM is also a variable objective and resources are needed to constantly adapt to new circumstances. This does not mean that “non-sustainable forestry” is something to be recommended. But what can be done in a short-term perspective? It is important for developed countries to start pursuing a more sensible discussion with developing countries. The fact that our main objective seems to be to silence vociferous public opinion by taking symbolic decisions is indefensible. This can actually be very damaging. We need better awareness of what we are doing.

The discussions in this report throw up a plethora of different questions. There is a great deal we do not know but about which we should know much more:

- We know very little about what is happening and what will happen in e.g. China, India, Russia and Canada. One reason is because we know very little about the forest resources in these countries. Another reason is because Sweden performs only limited research in the area.
• NGOs are keen to criticize what is done in the forest sector. The solution is, for example, often said to be a reduction in the amount of wood used. Would this be a good solution in the long term? Would it really protect the forests at all? Wouldn’t the consumption of cement, steel and plastic increase instead? What will the grand outcome of all this be?
• Wood is certainly “too cheap”. The felling of virgin forests and illegal logging are pushing the price down. What can be done in practice to come to grips with this problem?
• Swedish forestry will in the future be put under severe strain. What can be done to reduce this?

We can predict rapid changes in the forest sector over the forthcoming decades. Should we not put greater effort into trying to understand what is happening and more actively try to influence the course of events? The universities seem to find it difficult to provide the information on international forest issues the industry needs. There is probably a need for an American-style think tank to work with analysing the international forest situation. A group of 3–4 people, commissioned to work exclusively with these issues, would make a considerable difference compared to the current situation. It is not just a question of inquiries and research. A lot of work must also be put into network building and coordination. Such activity is not recognized academically and this is one problem we have today.

Forestry is still seen as a “collector’s” activity. The increasing investment in plantations and biomass production that is needed to reach a sustainable society will hopefully lead to forestry finally progressing from “collection to management” in the same way as both agriculture and animal husbandry have done.
11 References


FAO. Forest Products Yearbook. Different Years. FAO, Rome.


# 12 Abbreviations

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<th>Full Form</th>
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<tr>
<td>APFC</td>
<td>Asia Pacific Forestry Commission</td>
</tr>
<tr>
<td>C &amp; I</td>
<td>Criteria and indicators for Sustainable Forestry</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CIFOR</td>
<td>Center for International Forestry Research</td>
</tr>
<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
</tr>
<tr>
<td>COFO</td>
<td>FAO Committee on Forestry (meets every second year in Rome)</td>
</tr>
<tr>
<td>CPF</td>
<td>Collaborative Partnership on Forests (informal cooperation among 14 international organisations with forest issues on the agenda)</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FRA</td>
<td>FAO’s Forest Resources Assessment</td>
</tr>
<tr>
<td>G77</td>
<td>Group of 77 and China (often speaks on behalf of developing countries in UN contexts)</td>
</tr>
<tr>
<td>IAF</td>
<td>International Arrangement on Forests</td>
</tr>
<tr>
<td>IFF</td>
<td>Intergovernmental Forum on Forests</td>
</tr>
<tr>
<td>IIASA</td>
<td>International Institute for Applied Systems Analysis</td>
</tr>
<tr>
<td>IPF</td>
<td>Intergovernmental Panel on Forests</td>
</tr>
<tr>
<td>ITTO</td>
<td>International Tropical Timber Organization</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union of Conservation of Nature</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Governmental Organization</td>
</tr>
<tr>
<td>NWFP</td>
<td>Non-wood-forest-products</td>
</tr>
<tr>
<td>PGD</td>
<td>Swedish Policy for Global Development</td>
</tr>
<tr>
<td>PNG</td>
<td>Papua Nya Guinea</td>
</tr>
<tr>
<td>RWE</td>
<td>Roundwood equivalents. Industrial products converted to the volume of wood needed to produce them</td>
</tr>
<tr>
<td>SFM</td>
<td>Sustainable Forest Management. Not just a question of sustainable wood yield but also the physical and social environment shall be taken into consideration</td>
</tr>
<tr>
<td>SLU</td>
<td>Swedish University of Agricultural Sciences (Sveriges lantbruks-universitet)</td>
</tr>
<tr>
<td>TFAP</td>
<td>Tropical Forestry Action Plan</td>
</tr>
<tr>
<td>UNCED</td>
<td>UN Conference on Environment and Development 1992</td>
</tr>
<tr>
<td>UNECE</td>
<td>UN Economic Commission for Europe</td>
</tr>
<tr>
<td>UNFCC</td>
<td>UN Framework Convention on Climate Change</td>
</tr>
<tr>
<td>UNFF</td>
<td>United Nations Forum on Forests</td>
</tr>
</tbody>
</table>
Annex 1.

Some facts about the situation in developed countries

The information for Europe comes from the FAO’s latest Outlook Study (UNECE/FAO 2005) whilst the information for other regions and countries has been gathered from national sources.

Europe

Table 3 presents some figures on the European forest situation.

Table 3: The forest situation 2000 (UNECE/FAO 2000)

<table>
<thead>
<tr>
<th>Region</th>
<th>Area of forest</th>
<th>FAWS</th>
<th>Volume</th>
<th>Growth</th>
<th>Harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Millions of hectares</td>
<td></td>
<td>Billion cubic metres</td>
<td>Million cubic metres</td>
<td></td>
</tr>
<tr>
<td>Western Europe</td>
<td>123.5</td>
<td>103.3</td>
<td>15.9</td>
<td>555</td>
<td>278</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>52.3</td>
<td>45.8</td>
<td>9.2</td>
<td>262</td>
<td>118</td>
</tr>
<tr>
<td>CIS countries</td>
<td>17.7</td>
<td>12.2</td>
<td>2.9</td>
<td>72</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>193.5</td>
<td>161.3</td>
<td>28.0</td>
<td>889</td>
<td>413</td>
</tr>
</tbody>
</table>

1 Forest available for wood supply
2 Over bark.
3 On all kinds of forest land.
4 Over bark.
5 On all kinds of forest land.
6 Under bark.

The new Outlook Study (UNECE/FAO 2005) adds together the data for Europe, Russia and some other CIS countries and this leads to a certain amount of confusion. The data is seldom comparable over time (e.g. with previous studies) and there is often a lack of information to make it comparable. Russia is analysed separately here.

Forest assets have increased since the work with “Timber Trends Studies” was initiated at the end of the 1940s. Regarding area, there has been an increase from 146 to 195 million hectares (1950 to 1990) and this mostly due to agricultural activities being discontinued and the land being converted into forest. The area available for forestry has increased and the volume of wood has also risen dramatically – in western Europe from 8.2 billion cubic metres to 18.5 billion cubic metres in 1990 (this refers to “used forest”). In 2000 the

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I.e. forests used for forest production. If areas that are not used are included, the volume is higher.
volume was reported as 28 billion cubic metres but this figure was for all forests and included also more countries. The reason for the increase is not just better forest management but has also a lot to do with better statistics. When Germany, for example, performed a sample-based forest inventory at the end of the 1980s, the volume increased from 155 cubic metres/hectare in 1985 to 298 cubic metres/hectare in 1990. Similar errors have been found in many countries where national statistics are derived from a summary of figures from management plans (Persson 1995).

The gap between harvesting and growth has increased since the 1960s. Harvesting now amounts to 75 percent of the growth in eastern Europe and 70 percent in western Europe. There is a belief that exploitation of the forests is set to rise dramatically. Harvesting went up from 297 million cubic metres in 1950 to 351 million cubic metres in 1990/91 and reached 413 million cubic metres in 2000. Harvesting in 2020 has been roughly estimated at 467 million cubic metres This is no doubt physically possible since studies have indicated that sustainable production could be as high as 600 million cubic metres per year. Forest area, growth and volume are all expected to rise as well.

The relative importance of wood production is declining however - above all in western Europe - but the importance of non-wood products and services is on the other hand increasing. This trend is not as obvious in eastern Europe as it is in western Europe, but it is expected to rise there as well. The demand for more products and better management is thus increasing but the forest sector’s profitability is falling.

According to this estimate, Europe will have an import requirement, mostly in the form of pulp. There is also expected to be a deficit of sawn timber and boards in western Europe and a surplus in eastern Europe and of course the CIS.

There are many questions to answer regarding the future. Will the general public accept more felling, or will the demands on “other products and services” increase? Will there be increased demands on the production of bio energy? Will many countries on the continent continue to subsidize forestry?

The situation obviously varies a great deal among the 40+ countries in the European region. In many countries, the forest is of primary importance for recreation, whilst in other countries it is important above all for forest production. There is in many places a conflict between production and the environment. Many countries may in the future have labour recruitment problems. Many private forest owners might also lose interest in using the forest for production. The overarching question is of course whether European forestry can compete with low-cost countries. These problems already exist in many western European countries and will gradually become noticeable in eastern Europe as well. Forestry and forest production will however move eastwards for a period.
Russia

Russia is often reported as having a forest area of 793 million hectares, but a great deal of confusion surrounds this figure. What is known as the “forest fund” covers 1,114 million hectares, of which 826 million hectares is referred to as “forest land”. An area of 722 million hectares is supposed to be “land with vegetation” and 71 million hectares is some kind of open forest. About 40 percent of the forest land is said to be covered with mature/over mature forest containing 60 per cent of the growing stock. Plantations have long been said to cover an area of about 17 million hectares. All forest seems in principle to be state-owned. Eighty percent of the forest area is reported as being east of the Urals where only 10 percent of the population lives. Different reports give almost always different figures as regards the area of “forest” and this leads to substantial variation also in other figures since they are often calculated using the forest area statistics as a base.

Total volume is often reported to be in the region of 82 billion cubic metres and gross growth is reported by the IIASA to be 1,880 million cubic metres. There is substantial natural wastage (fires, insects, diseases, age) and the net growth is reported to be 970 million cubic metres, whilst possible harvesting is estimated at about 550 million cubic metres. The “harvestable area” is reported to be in the region of 350 million hectares (a volume of about 40 billion cubic metres). Current production is officially reported 180 million cubic metres but estimates vary considerably. Illegal logging is estimated to be between 2 and 50 percent. Before the dissolution of the Soviet Union, production was reported at 400–450 million cubic metres. A lot of wastage was also reported, however. The total volume of felled forest was sometimes estimated to be 600–650 million cubic metres. Transport during the Soviet era was subsidized. It is uncertain how much Russia can economically (and sustainably) produce at present. As has been revealed above, the reported figures on harvesting, etc., are often very contradictory.

The forest area seems to have constantly increased since 1961 (or rather since the Second World War) by a few million hectares or so a year. The average stock seems to have decreased, however. Investment in forest and forestry have been on the decline for a long time and the forest industry seems in many places to have collapsed and to a large extent be unprofitable. Increased activity is naturally predicted in the forthcoming years. Harvesting is expected to increase, but exports of roundwood are expected to decrease to 20 million cubic metres per year by 2015 (exports totalled about 38 million cubic metres in 2002). Total increases in exports of all forest products would involve an increase in exports of about 50 million cubic meter RWE (roundwood equivalents) in 2020.


The European Forestry Institute put illegal logging at 10-15 percent at a recent conference in Riga. The authorities want low figures and environmental organizations want to have higher figures.
As regards Russian forestry, we have been inundated with figures for decades. There is no doubt that the country has vast forest assets, but the major issue has since long been whether it is possible to extract the wood since the roads are poor and the transport fleet worn out. The organization of the Russian forest sector has always been very complicated. Much of the forest is also low-productive and virtually inaccessible and information about this is scant. Russia is also affected by the current international discussion and criticism of its present-day forestry is often harsh. Many NGOs are active in Russia and would prefer to reduce the present extent of forestry. Internally, they also differentiate between production, forest management and forest conservation and this can no doubt cause problems. Widespread corruption and criminality don’t help the situation much either.

The United States
About 204 million hectares of the total area of forest in the United States can produce at least 1.4 cubic metres/hectare/year and in addition there are about 100 million hectares of low-productive forest land and protected forests. A wood balance study was performed in 1990 producing the following results (Table 4 below).


<table>
<thead>
<tr>
<th>Category</th>
<th>Year 1986</th>
<th>Year 2000</th>
<th>Year 2005</th>
<th>Year 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total demand</td>
<td>580</td>
<td>623</td>
<td>796</td>
<td>810</td>
</tr>
<tr>
<td>Exports</td>
<td>54</td>
<td>62</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>Imports</td>
<td>125</td>
<td>105</td>
<td>119</td>
<td>113</td>
</tr>
<tr>
<td>Prod. US forest</td>
<td>510</td>
<td>581</td>
<td>745</td>
<td>767</td>
</tr>
</tbody>
</table>

Figure 1 on the next page shows the results of the “2005 Timber Assessment Update Base Run”. According to this, consumption started to stabilize in about 1980 whilst production reached its peak in about 1990 (515 million cubic metres) and thereafter began to fall. Imports started to increase around 1990. The study estimates that consumption and production will gather speed again around 2010 and that the importance of imports will then decrease relatively speaking. It is worth noting that production in about 2000 was in the region of 490 million cubic metres compared to the 1990 study’s estimate of 580 million cubic metres.

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5 The corresponding figure for Sweden is 1 cubic metres/hectare/year
One reason for the change is the conflict between the environment and production – especially in the north-west. The “Endangered Species Act” makes harvesting in state-owned forests difficult.

Harvesting in state-owned forests has decreased dramatically from 30 percent of total volume to just 5 percent (KSLA 2006). Officials in state-owned forests are constantly being sued, because environmental organizations and the like claim they are not complying with the law, causing harvesting projects to be discontinued.

Harvesting in private forests has not been affected as much. The Endangered Species Act also covers private forests but since it is prohibited to enter such forests, suing officials is more difficult.

There are many question-marks regarding the future of American forestry. Is an increase in harvesting of 24 percent (30 percent for coniferous trees) over the next 50 years realistic? Or that an upswing will begin as early as 2010?

The American forest industry (or the pulp industry at least) and the forest sector seem currently to have run out of steam. Companies are selling off their own forests to insurance companies, etc. Is it then realistic to predict, as the aforementioned study does, that coniferous plantations will increase by 60 percent (to 18.5 million hectares of well-managed plantations)? At any In any case if it should be done without state support? According to some sources, the annual area of forest plantations has declined in recent years.

In the long term, the US could probably produce 1 000 million cubic

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1 Figures have been chosen that show a slightly exaggerated development.
metres, but currently “only” produces about half that amount. How much of this potential can be realized? Is it possible to keep on shifting the problem on to someone else? (Sedjo 1993).

Despite its considerable potential, the US has been the largest net importer of forest industry products for decades. Imports now comprise about 140 million cubic metres RWE or 9.5 billion USD net (2002) The situation is partly due to the fact that the US can buy cheap products from Canada.

**Canada**

Canada has no reliable forest inventory system. Data on its forest assets vary depending on which report one reads. The area of forest land is often said to be in the region of 400 million hectares, 245 million of which could in theory be used as commercial forest. The figure often quoted as the area available that can be utilized as managed forest is just 145 million hectares, however. According to estimates, the wood volume in commercial forest amounts to 26 billion cubic metres. Total growth in commercial forests has been estimated at 360 million cubic metres/year whilst the AAC (Annual Allowed Cut) is now set at 235 million cubic metres (previously a higher figure). About one million hectares per year are currently harvested, which gives a production figure of around 200 million cubic metres. A total of 45 million hectares is thought to have been harvested over the years (sometimes exploitation several times). It should also be noted that fire, insects and disease cause considerable damage every year.

Production has risen from 86 million cubic metres in about 1970 to 200 million cubic metres in 2000. It is now said, however, that production cannot continue to rise but instead must begin to be reduced. This has been said for the last 30 years, so some kind of evidence is needed. Many figures and data are contradictory. It is sometimes said that sustainable forestry would involve halving production whilst other estimates say that production could increase 2–3 times over. Such a figure is presumably based on more intensive management of a larger area.

It has long since been claimed that Canada has been harvesting its most easily accessible forests, i.e. those that are closest to its industrial plants, and that its production costs would therefore increase in the future. There has also been a tough conflict between the forest sector and environmental interests, as well as between forestry and local populations. Various attempts have been made to alleviate these conflicts. The forest industry seems however to be in crisis and factories are closing down. It is no doubt possible to physically harvest more wood in Canada, but whether this would be economic is an entirely different matter. It seems we have now reached the stage where

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6 Main sources Anon. 2005c, Drushka 2000.
7 In the 1970s, harvesting figures of 226 million cubic metres in 2000 were predicted.
Canadian harvesting will either stabilize or decrease. The cause of the “problems” is the demands for better forestry and economic difficulties. It will quite simply be too expensive to supply wood to the factories.

Japan

Considering its large population, Japan has surprisingly large forest resources. The country has also been a major importer of wood, however. Out of a total forest area of about 25 million hectares, about 10 million is plantations of native species, established post-1945. About 60 percent of the forests are owned by small-scale private owners. Much of the state-owned forest is protective forest. The total volume is reported to be 3.8 billion cubic metres. Growth is estimated at the surprisingly low figure of 80-100 million cubic metres.

Since the beginning of the 1970s, the demand for wood in Japan has been in the region of 100-110 million cubic metres. Harvesting has dropped from about 75 million cubic metres in the 1950s and 1960s to its current level of about 15 million, whilst imports have increased to a corresponding degree. Mostly roundwood was imported in the 1960s but later decades saw an increasing amount of processed products coming into the country. It is worth noting that the most recently available forecast study from about 1990

Figure 2. Harvesting and planting in Japan (official statistics)

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predicted harvesting of 58 million cubic metres in 1996, rising to 90 million cubic metres in 2026.

The present problems in Japan are associated with the fact that tariffs on roundwood were being removed in 1961. Japanese forestry is quite simply unable to compete with imports and private owners have also very little interest in pursuing forestry activities - despite large subsidies. The costs in forestry are high due to the difficult terrain and undeveloped technology. It is also difficult to find the labour. About 30 percent of the labour in the forest sector is over 65.

According to forecasts, the build-up of the Japanese forests will continue. The objective is to build up the growing stock to 5 billion cubic metres and the area of plantations shall also increase slightly. It seems they will change from traditional clear-cutting to management of multilayered stands and this is expected to lead to reduced growth. None of the plans appear to have worked so far, however, and it is therefore extremely unlikely that expectations will be met.

**Oceania**

In a global perspective, the forest resources in Australia and New Zealand are relatively small. They are however interesting since the area of fast-growing plantations are extensive. There are also environmental conflicts worth discussing.

In Australia the area of forest is reported by e.g. the FAO (FRA 2005) to be 164 million hectares. This area contains a great deal of open forest, however. The “closed forest area” has often been estimated at 41 million hectares, concentrated in the east and south-east region. In addition to these “forests”, there are over 400 million hectares of “bushlands”. About 11 million hectares of state-owned land is managed forest whereas double that area has been set aside for conservation. Plantations are said to cover 1.7 million hectares (1 percent) and these provide 60 percent of timber production. Australia is currently reporting annual deforestation of about 300 000 hectares and 31 million cubic metres of wood are harvested. Australia exports over one million cubic metres as wood-chips, but in total, the country has almost a two million ASD import surplus of forest products. Officially, the various Australian states control exploitation of the forest.

Forest management in natural forests is problematic and there are strict rules governing the exploitation of “natural vegetation”. These rules make it e.g. difficult for farmers with pastureland to manage the land efficiently, since it is difficult to increase production by clearing the natural vegetation. As a result of the limitations in their user rights, the farmers make major

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9 Sources: FAO 1997a, Anon. 2004, Anon. 2005a
losses, which means therefore that the cost of many environmental measures has to be met by the landowner.

One of the few places on Earth where the rainforest has relatively recently been managed sustainably on a commercial scale was in Queensland (Poore 1989). As a result of all the conflicts, however, these forests were taken out of production and converted to a World Heritage Site. There are NGOs who are strongly opposed to forestry and there is opposition to e.g. the export of wood-chips, harvesting in old forest, the planting of exotic species and using wood for energy. Bearing in mind all the rules and conflicts, it is surprising that 300 000 hectares can be converted into agricultural land every year and the wood sold as wood-chips.

There is a 2020 vision for plantations (Anon. 2005d), in which the goal for 2020 is three million hectares. An area of 19.4 million hectares is reported to be available for plantations. Australia is very much an urbanized country. There is little understanding for the needs of rural communities and implementing the programme can therefore be problematic. Until now, plantations have normally been established on old agricultural land and it may therefore be a problem if future plantations are established in areas of natural vegetation. Most plantations were established between 1995 and 1999. The annual amount of planted forest land decreased from 137 000 hectares per year in 2000 to 56 000 in 2003, the reason being a shortage of cheap land and uncertainty regarding taxes. An increasing amount of broadleaved trees (eucalyptus) is now being planted as there is considerable opposition to exotic species.

New Zealand has officially 8.2 million hectares of forest. Interesting from a forestry point of view is that 1.8 million hectares are plantations of mostly Pinus radiata. After a number of tough conflicts, harvesting in natural forests has virtually ceased and is now responsible for less than one percent of total harvesting.

The state is the biggest owner of natural forest (77 percent).

Originally, New Zealand was 80 percent forest but natural forest now only covers 23 percent. Large-scale plantations began in the mid-1920s and, periodically at least, used to receive subsidies. Many of the original plantations were state-owned but have now been privatized.

The interest in plantations has gone up and down. Recently - since 1994 - the area of new plantations has decreased slightly. The total area of planted forest is now going down slightly due to some harvested areas not being replanted but instead converted to pastureland, since plantations are becoming less profitable. The New Zealand forest industry cannot cope with all the wood it produces and a great deal is exported as round wood, something which causes a certain amount of conflict. Transport costs have also increased.

Main sources: FAO 1997b, Anon. 2006a
and seaborne timber freighters often have to return to New Zealand empty. Harvesting has also declined somewhat in recent years (from 21 million cubic metres to about 19 million cubic metres).

It is said that New Zealand has 12.5 million hectares where plantations could be established. A large number of plans have been agreed upon. If the annual plantation areas were 60 000 hectares, 60 million cubic metres of wood could be harvested in 2030. Plantations have periodically reached 100 000 hectares per year.
Annex 2.

Some facts about the forest situation in developing countries

1. Regional analyses
Developing countries have large areas of natural forest and some also have large plantations. In developing countries, even more so than developed countries, it is not primarily the physical resources or the physical conditions that will determine the future of the forest sector. It is very much a question of the political, economic and social aspects. By way of introduction, a brief summary of the situation in different regions is given here. The regional analyses are mostly based on the Outlook Studies performed by the FAO.

1.1 Africa
Africa has a population of about 900 million and a forest area of 635 million hectares (350 million of which can be termed “closed forest”). The planted area amounts to 8 million hectares, most of which is in northern and southern Africa (FAO 2001), and deforestation is in the region of 5 million hectares per year. According to official figures, about 600 million cubic metres of wood is harvested each year, around 90 percent of which is fuelwood. Relatively speaking, there is very little consumption and production of forest industry products.

The forest sector is influenced by a large number of external factors. Population growth and urbanization are rapid, economic growth is low and HIV/AIDS is having a radical effect on many countries. Africa is dependent on agriculture, which is developing very slowly. Administration is weak and in many places is showing signs of being further weakened, but there are also signs of greater democratization, decentralization and greater involvement of local populations. The private sector, informal sector and civil society are becoming more involved. There are a number of “failed states” and conflicts flare up in many places both within and between countries. The latest Outlook Study for Africa is basically very pessimistic about the period up to 2020.

- The studies predict continued deforestation.
- The area of sustainably managed forest (which is currently negligible) will increase very slowly.
- There will not be any major expansion of planted forest.

Main source: FAO 2003a
• Local populations will be increasingly dependent on “trees on non-forest land”.
• Fuelwood is expected to continue to be the most important forest product and the most important source of energy.
• There will be a slow rise in the demand for other forest products.
• Many “non-wood products” are expected to become increasingly difficult to obtain.
• Africa will continue to be a marginal producer and a very small trade partner.
• Harvesting of industrial wood is expected to rise by 20 million cubic metres between 2000 and 2020.
• The forest will be most important as a producer of all kinds of products for the local population and for environmental services.

In a long-term perspective, certain African countries have very good conditions for forest production, but they have a long way to go before any success is achieved. The demands for SFM in Africa specified by the world around do little to help the situation. Development is occurring so quickly that it seems few measures can influence what is happening in the short term. This suggests there is a need for emergency measures, but which ones?

1.2 Asia and Oceania/APFC\(^2,3\)
This FAO region includes countries from Pakistan to Japan and from Mongolia to the South Pacific. The population in the region is about 3.7 billion (growth of 1.4 percent per year) and is responsible for 25 percent of global GNP. There are approximately 735 million hectares of natural forest,\(^4\) (an estimated 250 million hectares are available for forestry (see footnote 2)). The developing countries in the region have 0.16 hectares of forest per capita. Net deforestation is estimated at 1.2 million hectares a year, but a lot of deforestation is hidden by high plantation figures especially in China. Officially, ten percent of the forest land is protected. According to official figures, the region has the largest area of plantations in the world – 64 million hectares – and this area is constantly growing. There are also 35 million hectares of tree crops and these are increasingly used for wood production. Total wood production is estimated as 1 000 million cubic metres (78 percent of which is for fuelwood). Two-thirds of fuelwood production comes from non-forest land. There is a great deal of illegal logging and in some countries the true amount of logging can be 2–3 times the official figures. According to one estimate, 240 million people are “dependent” on the forest (normally the poorest people).

\(^3\) The main emphasis is on developing countries. Australia, Japan and New Zealand are discussed elsewhere. Unless otherwise stated, general statistics also include the developed countries in the region.
\(^4\) 538 million hectares in developing countries
There is no estimate as to how much wood can be produced in the long term in the APFC area. Many countries, such as Thailand, China, Sri Lanka, The Philippines, Cambodia, Bangladesh, Pakistan, India, and Laos, have introduced a ban or restrictions on logging in natural forests. It is estimated that these programmes reduce production by 30 – 50 million cubic metres. Logging bans in natural forests are often due to flood disasters, for which forest logging is often blamed and governments have to show they are able to act. In addition, it is often an attempt to gain control over illegal logging and general chaos in the forest sector. According to the plans, logging restrictions in natural forests shall be compensated by increased harvesting in plantations. This is true of countries such as Thailand, The Philippines, Indonesia, and Vietnam. The problem of wood supply is often solved by increasing imports (e.g. from Laos, Cambodia, and Myanmar). Much of this imported wood is often thought to have been illegally harvested. Countries such as The Philippines, Indonesia, East-Malaysia, Thailand, and Papua New Guinea have forcefully and determinedly abused and destroyed their forests. Many of these countries have become net importers after previously being major exporters. Countries such as India, Vietnam, and China are on the other hand making serious attempts to build up their resources by establishing plantations.

Trends point to rapid change. The population and economy will grow rapidly and the demand for agricultural products and wood will therefore lead to continued deforestation in many areas. Plantations are becoming more important and demands on them to succeed are increasing. Trees on non-forest land will in many countries gain importance for the local population. It is anticipated that the APFC area will need to increase imports of most forest products. Rapid expansion of the pulp and paper industry is expected, and the need for imports may decrease. This is all guesswork, however, bearing in mind the uncertainty of what will happen in China and India.

Governments have often become involved in the forest sector. President Suharto in Indonesia decided, for example, to build up the world’s largest plywood industry, something he also succeeded in doing. He had the same plans for the pulp and paper industry, and the industry has undergone massive expansion over the last 15 years. Raw materials were eventually to come from plantations, but these have not been established as planned and much of the raw material is still extracted from natural forest. A shortage of wood is now emerging. Banks also wanted to be in on the act and loaned generous amounts of unsecured capital. (Barr 2000).

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China is currently the "hottest" forest-rich country, which is why special information has been presented in this box.
China currently has a population of 1.3 billion, expected to rise to 1.45 billion in 25 years’ time. Its GDP growth has stood at 9-10 percent for quite some time. China, alongside the United States, is the largest importer of forest products in terms of value, but within some sectors it is beginning to become a major exporter as well. According to FRA, the country had 197.3 million hectares of forest in 2005 and the area is reported to be growing all the time. The area of natural forest is often reported to be decreasing while plantations are on the increase. Out of the total area of forest, 65 million hectares were available (or permitted) for harvesting whilst the rest was to be set aside as protective forest, etc. Much of the country’s mature forest is difficult to access whilst the forests that are accessible often are comparatively young.

FRA 2000 and many other sources put the planted area at 46 million hectares, but FRA 2005 puts it at “only” 30.8 million hectares. Regarding plantations, it is quite naturally possible to arrive at totally different figures depending on what is included. Only 5 million hectares of the plantations are thought to be fast-growing (of interest to the forest industry) while the rest is slow-growing. There are plans afoot to increase the area of fast-growing plantations by 5.8 million hectares (or even 13.3 million hectares).

The volume of wood in the forests is currently put at 13 billion cubic metres. According to one estimate, 2.3 billion of this is in accessible mature forests. Official sources say that the volume has increased steadily, while others say it has decreased. Various sources put growth at between 265 and 497 million cubic metres.

Total harvesting is estimated by the FAO to be 284 million cubic metres (67 percent of which is fuelwood) but other sources put this figure as high as 365 million cubic metres. There is information on illegal logging and various types of wastage, so the figure for industrial wood (93 million cubic metres) is very unreliable. Overcutting and illegal logging are often estimated to be in the region of 100 million cubic metres. The ban on harvesting in certain parts of the natural forest has reduced production and significantly increased the need for imports.

Despite all the unreliable figures, it seems Chinese imports are currently in the region of 100-134 million cubic metres (About 50 percent of the total need). Guess-estimates say that 35 percent of the imports come from illegal logging.

The demand for industrial wood in 2015 will be somewhere between 200 and 600 million cubic metres. China seems to have difficulty increasing production and there could be considerable pressure exerted to increase imports. If censorship is removed, for example, the demand for paper may well rise. Making pulp in China is not cheap but since it is such a massive market, the big players are desperate to “get in on the act”, at least in the paper sector. According to a number of studies, many new or planned pulp factories are likely to have major problems with raw material.

Roundwood is imported from Russia, Indonesia, Papua New Guinea, as well as from countries such as Congo, Liberia, Cameroon and Myanmar. Forest resources in several of these countries are reported to be on the decline.
1.3 Latin America

Latin America has enormous areas of forest – 924 million hectares – but these are only used to a limited extent for forestry and have mostly been seen as an obstacle to development. In 1970, 8 out of 13 countries in South America were net importers of forest products. This has now changed to 6 out of 13. The region as a whole also has a large net export. This is mostly due to comparatively recently established plantations (and industries).

Deforestation will continue and more land will be converted to agricultural land and pastureland. Guesstimates regarding the development of land use can be seen in Table 5 below.

Table 5: Development of land use in Latin America

<table>
<thead>
<tr>
<th>Land use</th>
<th>2000</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>48%</td>
<td>44%</td>
</tr>
<tr>
<td>Pastureland</td>
<td>30%</td>
<td>6,4%</td>
</tr>
<tr>
<td>Cultivated land</td>
<td>6,4%</td>
<td>7%</td>
</tr>
<tr>
<td>Tree/bush crops</td>
<td>1,2%</td>
<td>1,5%</td>
</tr>
</tbody>
</table>

1 The reduction is in the region of 4 million hectares a year

Forest plantations will increase in significance. The FAO has estimated that plantations will increase from 12 to 16 million hectares in 2020, but other estimates put this figure much higher. Brazil and Chile are the countries mostly in the spotlight, but Uruguay and Argentina are becoming increasingly interesting. The forest sector encounters problems in many Latin American countries, but this may change rapidly if more effective governments come to power.

Development in the natural forest is mostly due to agricultural policy and infrastructure expansion. For years, taxes and subsidies have often been to the detriment of the forest sector and have favoured the agricultural sector. The economy is the key control factor in Latin America. Deforestation, for example, can be related to the price of meat or the exchange rate.

Regarding the natural forest, uncertainty surrounding user rights will continue to cause problems. Officially, much of the forest will be state-owned, but conflicts will arise. Urbanization, corruption and ineffective governments will also influence development of the forest sector. The forest sector is under pressure to set aside large areas in for example the Amazon Basin as reserves. Many inhabitants in developed countries see the Amazon forests as a global resource.

Main source: FAO 2005a
2. Fuelwood

Fuelwood is the largest forest product in developing countries and the problems local populations have in obtaining it are often described. “The fuelwood shortage” is often cited as a major reason for establishing more plantations or even for exploiting the Swedish forest. It was in connection with the oil crisis in the early 1970s that the fuelwood shortage “was discovered”. It was claimed that the poor in developing countries were those who experienced the most difficult energy crisis because of the lack of fuelwood. Some of the arguments alluding to the seriousness of the crisis are quoted below:

- There was a widening gap between fuelwood demand and supply.
- An FAO study published in 1981 (FAO 1981) claimed that 2 billion people used fuelwood as their main source of energy, and 1.4 billion of these were experiencing a shortage. It was also estimated that by 2000, three billion people would be experiencing a shortage of fuelwood.
- Ever-widening circles of treeless areas surrounded towns and villages. Fuelwood consumption led to deforestation.
- The price of fuelwood was to keep on increasing.
- Rural populations were forced to spend more time looking for fuelwood. Women and children were those worst affected.
- As a result of the fuelwood shortage, people were using cow dung and agricultural waste for fuel. This was said to reduce agricultural consumption.
- The shortage of fuelwood was causing people to change their diets.
- It was assumed that farmers didn’t know how to grow trees.

The philosophy behind the “gap theory” is illustrated in Figure 3, which shows the analysis of the situation in Kenya performed by the Beijer Institute in Stockholm. Demand will rise as the population increases, but potential production is falling. This will cause a widening gap between supply and demand.

Starting in the 1970s, considerable amounts of development assistance were given to fuelwood plantations. It was often a question of communal plantations/village plantations. A great deal of support was also given to introduce better stoves and agroforestry was all the rage. At the end of the 1980s, the fuelwood shortage, gap theory and the idea of fuelwood plantations were all called into question. Some of the arguments made by innovators are listed below:

- It became clear that we had to differentiate between the situation in urban versus rural areas.

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8 Main source Arnold et al. 2003.
- The statistics published by FAO on fuelwood consumption turned out to have major defects. The estimated average consumption per capita in a geographical area - often an out-of-date figure - was merely multiplied by the population.
- The quoted FAO study was at fault since it presumed that people used only fuelwood. They were, however, often using biomass (e.g. agricultural waste) instead of wood. The study also presumed that the fuelwood came from the forest but it was shown that in Asia, for example, most of it actually came from agricultural land.
- If people experience a problem, they take steps to alleviate it. They may start to grow or protect trees, and start to reduce their wood use in different ways.
- These spontaneous adjustments need not necessarily be negative.
- A shortage of fuelwood can just as easily be the result of a lack of time as a physical shortage of wood.
- User rights to the land can sometimes make it difficult for people to react to a shortage. A permit may be required, for example, to cut down a planted tree.
- Farmers know how trees are to be planted, but there is seldom an incentive to plant trees just for fuelwood. Farmers will plant when there is a market and planted trees are often too valuable to burn. Fuelwood can be obtained from the waste of biomass production.
- Dung is a good fuel and using it as fertilizer is seldom a good alternative.
- Better stoves have limited potential in rural areas.
- Establishing plantations to produce fuelwood for urban areas has seldom been economic. It is cheapest to collect the wood for free.
Fuelwood production is seldom a major cause of deforestation.
In urban areas, poor people can experience difficulties if energy prices rise.
The conversion to “more efficient” energy can sometimes happen very quickly in urban areas.

This is a summary of the development of theses and antitheses from 1970 to 1990. There was considerable resistance to adapting to this new knowledge. Over a certain period of time, many forest authorities received considerable sums of money for establishing fuelwood plantations (e.g. as part of development cooperation efforts) and they wanted to continue receiving this funding. Development assistance donors and foresters often found it difficult not to see fuelwood plantations as the ultimate solution to the problem.

Despite this, however, fuelwood disappeared from the agenda in the 1990s. Even if there were many errors in the description of the fuelwood crisis in the 1970s, fuelwood is nevertheless the largest forest product in developing countries. Over the next twenty or thirty years, it will also be of major importance in most developing countries and there are many areas where social groups are experiencing problems due to their difficulties in obtaining energy. They do have more urgent problems to deal with, however, such as water and health, although the authorities should ask themselves whether some form of intervention is needed and is feasible. It may often be a question of amending policies instead of physically establishing plantations.

The FAO has recently drawn up new demand functions for fuelwood. As mentioned earlier, these were previously based on populations and ecological zones but now, factors such as income, urbanization, availability of forest, temperature, etc., have also been included. Results of the new study are shown in Figure 4.

It appears that global consumption of fuelwood reached its peak in 2000. In South-East Asia, it has fallen since 1970 and in East Asia since 1980, whilst it may reach its peak in South Asia in 2010. Consumption in Africa is still on the rise. Even in South America, consumption is continuing to increase, although it is on a much lower level. The consumption of charcoal is rising in most regions. Consumption of charcoal currently makes up 20 percent of fuelwood consumption. Charcoal consumption is highest in Africa and South America.

The story of fuelwood illustrates the dangers of projecting trends too far. It also illustrates how an unchallenged truth can emerge, a truth which in hindsight can be difficult to understand. It can naturally also be seen as a proof that the latest fashionable subject of development assistance donors can turn out to be wrong. We can also see that accepting new truths often

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Very few scientific articles were written on the subject, for example.
meets with resistance. The problem with the gap theory was that everything was seen as very static and it wildly underestimated the ability of human beings to spontaneously react to a problem. People can often solve problems on their own, however, without the support of either governments or development assistance donors.

3. Exploitation of rainforest/natural forest in developing countries

The primary discussion point here is the scope for producing industrial wood. FAO’s (2004) statistics about industrial wood production in developing countries are shown in Table 6 below. The figures are for 2002 and in million cubic metres under bark.

<table>
<thead>
<tr>
<th>Region</th>
<th>Industrial wood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>66.8</td>
</tr>
<tr>
<td>Asia</td>
<td>210.2</td>
</tr>
<tr>
<td>Latin America</td>
<td>166.5</td>
</tr>
<tr>
<td>World</td>
<td>1,588</td>
</tr>
</tbody>
</table>

Persson 1995
Developing countries are thus responsible for about 28 percent of global industrial wood production. About 40 percent (ABARE/JP 1999) comes from plantations so the natural forest of developing countries is responsible for 17 percent of global industrial wood consumption. Is there scope to increase this production?

Thirteen developing countries have a production of over 5 million cubic metres and these countries are responsible for 78 percent of production in developing countries. None of the countries obtain most of the production from rainforests, which is the type of forest sparking the most debate. We therefore restrict our discussion here primarily to the rainforest’s potential. Total production from these forests may currently be in the region of 150-200 million cubic metres.

Rainforest has been exploited for centuries to produce well-known tropical wood-types such as mahogany and Gabon. It has often been a question of the selection felling of valuable trees dotted around the forest. Out of a total volume of 275–425 cubic metres/ha (over 7cm diameter of branches), only 10–15 cubic metres are felled in Africa and Latin America, whilst 50-70 cubic metres/ha can be felled in South-East Asia.

It is often said that it is possible to manage the rainforest sustainably. A number of systems have worked in pilot form. These have often been polycyclic, i.e. multilayer systems (or selection felling) have been employed. Sometimes they have been monocyclic systems, i.e. most of the wood has been extracted on one single occasion. According to a study by the International Tropical Timber Organization (ITTO) from 1989 (Poore 1989), large-scale sustainable management of the rainforest only occurred in Queensland, Australia. In a rainforest area of one million hectares, forestry operations were carried out on 161 000 hectares. The forests were managed very intensively using a selection felling model, but despite this, it was still financially profitable. Environmentalists protested about the felling, however, and everything has now been set aside as a World Heritage Site. Adding all the pilot schemes together, total managed rainforest area amounted to less than one million hectares (0.1 percent).

This study has recently been updated (ITTO 2006) even though the results are not entirely comparable with the study from 1989. An area of 36 million hectares is now said to be managed in accordance with the definition of SFM given in the study. If true, this would correspond to 3-4 percent of the total area of closed forest in the tropics. This points to a slight improvement compared to 1989 but it is still a question of only a limited area being managed in accordance with the rule-book. Many developing countries have requirements for SFM but it seems to be very difficult to implement it on a large scale. Why?
1. The forests disappear before we have time to see whether the management system works or not. When forests are opened up for harvesting, poor farmers join in and spontaneously convert the forests into agricultural land. In West Malaysia, for example, the “Malayan Uniform System, MUS” (a monocyclic system) was employed in the lowland rainforest. After an initial exploitation of the forests, they were however converted, according to plan, into oil palm and rubber tree plantations. Would MUS have worked in the long term?

2. The selection felling methods used are often very destructive and in South-East Asia can often damage 2–3 other trees for every tree cut down. The use of bulldozers has made felling easier but management more difficult.

3. The management systems specified in the rule-book are not adhered to. The plan may, for example, specify a rotation period of 40 years, but the loggers often return after just a few years.

4. There is often a lack of ecological knowledge. Many management systems are also very complicated and demanding, and are more akin to horticultural management systems. This can be unrealistic in a weak developing country and also be expensive.

5. Forestry is of very little importance to the local population. Serious conflicts often flare up between the local population and the harvesting companies.

6. Forest administrations are almost always undermanned and too weak to control the harvesting companies. Corruption and other questionable activities can also destroy the best intentions.

In the current situation, felling activities in the rainforest are tantamount to mining, resulting in ragged forests, abused local populations and massive amounts of money lining the pockets of all kinds of dubious interests. The forests have had good development potential but this has mostly been squandered.

Forestry is often vindicated by the fact that it can be sustainable. If the forests are not used for forest production it is argued, it is not possible to defend them against alternative forms of exploitation. The problem is that it is difficult to defend the forests against alternative forms of exploitation even when they are being used for forestry. The initial harvest is of course profitable but to then start managing the forests for 30–40 years in order to reharvest it can seldom compete with other forms of exploitation. The most profitable course of action is to tear down the forests and convert them to some form of agricultural or forest plantation. In all likelihood, forest plantations will increasingly start to dominate the production that currently comes from the rainforests (at least in terms of volume). It is still difficult to succeed with plantations of known tropical hardwoods.
There is considerable resistance from the market against using wood from the rainforest and conflict seems unavoidable when any tropical tree species is used. Felling in ancient forest and frontier forest (i.e. old virgin forest) provokes the most opposition. Most countries with rainforest have an administration that is so weak, that it is highly unlikely any major areas of forest will be certified\textsuperscript{11}. In addition, it will be expensive. It must be attractive for countries with rainforests to convert the land to some other form of land use that provides higher income and leads to fewer conflicts and problems. Income from untouched forest is in spite of everything rather limited.

What is discussed above is traditional rainforest management and production of high-quality tropical wood from often relatively untouched primeval forests. Over the last ten years, rainforest has started to be used in some places for the production of wood pulp and other products (e.g. on Sumatra). This may sound brutal, but it may be easier to manage the forest in this way than by applying selective felling. In one area in Peru, 30-40 metre wide strips were clear cut. The surrounding forest was preserved until the strip had been naturally regenerated. The system worked since there was a market for all wood, which is unusual. Another explanation for the success was the use of buffalo to transport the wood. As a result, no compaction or other damage to the soil occurred. The trial has now been concluded. A similar system was used in Colombia to transport wood to a pulp factory. The wood was extracted using a cable-car system and the rotation period was 30 years. The system was eventually abandoned for social reasons. In certain types of forest, however, similar systems could provide better results than selective felling.

When it comes to producing valuable timber, well-managed natural forests can at best only produce 0.5–2 cubic metres/hectare/year. If it is only a matter of producing biomass/wood, production can be much higher. When a gap is abandoned in the rainforest, vegetation shoots up and growth can be 10–15 cubic metres/hectare/year during the first twenty or thirty years. Some studies suggest, however, that harvesting costs in these wild hardwood forests are very high. It must therefore be attractive to eventually convert them into plantations of known species.

The conflict surrounding rainforest management mostly concerns encroachment in virgin forest. In many places, however, large areas of secondary forest are starting to appear. These are forests that have been selectively felled and mismanaged, but that have not been converted into agricultural land or are the result of natural regeneration when agricultural land has been abandoned. This type of forest can increase in some places when agriculture is intensified and the need for more agricultural area decreases. The FAO (2005b) reports that there are 850 million hectares of similar forest. There

\textsuperscript{11} ITTO (2006) reports that 10.5 million hectares have been certified in ITTO producer countries.
are systems to rehabilitate these forests and kick-start the production of commercial tree species. On Sarawak and in Costa Rica, a system of “liberation thinning” (thinning around valuable trees) is in use. It is also possible of course to use these forests for intensive biomass production.

To summarize, accessible and untouched rainforest areas will almost certainly be cleared of valuable wood. In a global perspective, this is a question of relatively small volumes. Very limited areas will be managed sustainably and it is uncertain how large the areas will be that can be effectively protected as reserves. Large areas that are currently rainforest will be converted into other land use as the land has a greater financial value without trees than with them. The selective felling of valuable trees and the burning of remaining tree vegetation, practices that are currently common, might become less so in the future. It may be the case that countries such as China start to take care of every tree in the rainforest as well (before it is converted into agricultural land).

When the pressure on the forest decreases, some secondary forests might be used for wood production to a greater extent than today. If biomass for energy becomes important, both primeval and secondary forests will be subjected to increasing pressure. From a purely economic point of view, it is in that case probably better to convert to plantations.
This third edition of the Swedish FAO Committee publication series analyses the risk of possible conflicts between on the one hand the objective of fulfilling the need for wood production and on the other the objective of sustainable forest management. A number of questions are posed to which answers are sought: Will there be a shortage of wood? What are the major features of global forest development? Are developed countries shifting their problems onto developing countries? What role does the international forest process play in solving the problems? Developed countries are putting demands on developing countries to take better care of their forests; they shall manage them sustainably, stop deforestation and stop illegal logging. In the current situation, is it possible to achieve these objectives quickly? Are the demands realistic? The questions are strongly linked to the Swedish policy for fair and sustainable global development.

The FAO (Food and Agriculture Organization) is the UN's expert body for agriculture, forestry and fishing. It was founded in 1945 and one of its aims is to contribute to secure food supply, freedom from hunger and a better global economy.

The Swedish FAO Committee was founded in 1950, the same year as Sweden became a member of the FAO. The committee's task is to help the government in its work with secure food supply for all people bearing in mind global development and preserved biological diversity within the areas of agriculture, fishing and forestry. The committee consists of fourteen members and Chairperson Ingrid Petersson, State Secretary at the Swedish Ministry of Agriculture. The Swedish Government's overarching work with issues concerning FAO as an organisation is discussed in the FAO Group at the Ministry of Agriculture.