How Forestry contributes to the African Development Bank’s High 5 Priorities: challenges and opportunities
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Size of African Forests</td>
<td>2</td>
</tr>
<tr>
<td>Distribution of African forests by sub-regions and countries</td>
<td>2</td>
</tr>
<tr>
<td>Forestry and the High 5s</td>
<td>3</td>
</tr>
<tr>
<td>1. Light up and power Africa</td>
<td>3</td>
</tr>
<tr>
<td>2. Feed Africa</td>
<td>4</td>
</tr>
<tr>
<td>3. Industrialise Africa</td>
<td>5</td>
</tr>
<tr>
<td>4. Integrate Africa</td>
<td>7</td>
</tr>
<tr>
<td>Forest products as friendship cord and inter-continental integration</td>
<td>10</td>
</tr>
<tr>
<td>5. Improve the quality of life for the people of Africa</td>
<td>10</td>
</tr>
<tr>
<td>Challenges and opportunities</td>
<td>12</td>
</tr>
<tr>
<td>Conclusions and recommendations</td>
<td>13</td>
</tr>
<tr>
<td>Recommendations</td>
<td>14</td>
</tr>
<tr>
<td>Notes</td>
<td>15</td>
</tr>
</tbody>
</table>
African forests span over 21 to 23 percent of the continent’s total land mass. However, forest endowments vary across the different regions and countries of Africa, with far higher proportions in the continent’s central and southern regions. The analysis in this paper provides greater evidence of the numerous contributions of forestry to the African Development Bank’s High 5 development priorities.

The paper stresses that forestry has tremendous potential to contribute to the green economy and increase household as well as state revenues in African countries. It further pinpoints that the realisation of these opportunities depends on the governance of the forest industry, the ways in which forests are managed, the need for increased local value addition to primary forest products, and the need to promote intra-African trade in forest products.

The paper concludes that the people of Africa are highly dependent on forests for household nutrition, health, energy needs, income generation and employment. This understanding should give development workers the opportunity to look at food security, household wellbeing and income generation from not just traditional agriculture but in combination with forest products. A major prerequisite, however, will be recognition by policy-makers of the importance of forest product value chains in Africa’s development. This would be through favorable business climate and facilitating access to inputs, finance, training and transport.

In operations in its regional member countries, the African Development Bank could intensify policy analysis, generate knowledge and support forest product value chains. In this direction, the Bank’s programmes and projects or pathways towards sound investments and development outcomes in Africa could always leverage forestry in the implementation of the High 5s. Initiatives could include but not necessarily be limited to the promotion of value addition to forest products (wood and non-wood forest products), promotion of biomass energy, promotion of industrial plantations of desirable tree species, and promotion of sustainable forest management. Other interventions are the integration of forestry and agriculture for climate-resilient productive systems and agroforestry, the promotion of intra-African trade in forest products and related commodities, and the promotion of good governance and better institutional arrangements.
Introduction

Historically, much of the emphasis on forest management has been on the production of wood and wood products for local and international trade. Nowadays, there is increasing awareness of the importance of forests in the provision of global public goods. Development workers are increasingly considering forestry to offer pathways for rural economic development and improved livelihoods. The idea is that forestry initiatives will help reduce poverty, provide food and nutrition security, as well as healthcare and shelter. They could also generate income for national governments, contribute to climate change adaptation and mitigation. Other areas of impact would be in biodiversity conservation and management, improved hydrology, water availability, as well as environmental sustainability. Forestry contributes enormously to the development and realisation of all the African Development Bank’s High Five priorities. This paper provides some hard evidence to support this fact. However, there are considerable opportunities and challenges to be tackled. Before dwelling on the evidence, it would be instructive to provide a short description of the size, distribution and endowments of African forests within regions and countries.

Size of African forests

According to the Food and Agriculture Organization (FAO), Africa’s forests and woodlands are estimated to cover 650 million hectares, or 21.8 percent of the continent’s land area. Recent estimates put the African forest area at 675 million hectares or 23 percent of the overall land area of the continent. In addition, there is an estimated 350 million hectares (13 percent of the land mass) of “other wooded land.” This is made up of wooded savannah, thickets and shrublands. There are huge volumes of wood contained in “trees outside forests,” which include trees and other woody plants in rural landscapes (farms, pastures, agroforestry and horticultural systems) as well as in urban settings, on private land, along roads, and not forgetting planted forests estimated at about 15 million hectares.

Distribution of African forests by sub-regions and countries

Using the FAO (2003) estimation, African forests and woodlands are unevenly distributed among sub-regions and countries. This creates significant imbalances in the demand for and supply of forest-derived goods and services. Five sub-regions may be identified with the following proportions of the African forest estate: central Africa (37.1 percent), southern Africa (28.0 percent), east Africa (13.2 percent), west Africa (11.1 percent) and north Africa (10.5 percent) (Figure 1). North and west Africa are the least forested sub-regions, largely as a result of their extremely arid conditions.

The sub-regional classification in Figure 1 conceals inter-country differences. Considering that forest cover is a good indicator of the forest status of any given country, and that policies or strategies to alleviate forestry problems have to be implemented at the national level, the classification of African countries into forest cover categories is more relevant than the sub-regional classification. This analytical classification brings together at a glance, those with very low, low, moderate, adequate, high or very high forest cover. Based on this approach, six forest cover categories were identified with the features shown in Table 1.

Obvious conclusions may be deduced from this analysis. Forest endowment ranges from very rich to very poor forested countries in Africa. The variation in forest endowments between regions and countries offer great opportunities for intra-African trade in forest products and services to ensure the maximum contribution of African forestry and forests to the High 5 priorities of the African Development Bank in Africa.
Forestry and the High 5s

The central focus of forest management has been on the realisation of the economic, social and environmental benefits, as prescribed by sustainable forest management principles. These tenets are well-aligned with the High 5 priorities of the African Development Bank.

1. Light up and power Africa

According to the International Energy Agency (IEA), 650 million people in Africa alone have no access to electricity. Most people living in Africa use significantly less electricity in a year than the global average – and 7 out of 10 people in sub-Saharan Africa live without it every day. Traditional indoor stoves fueled by woodfuel, coal, crop waste and dung that are commonly used in Sub-Saharan Africa burn fuel inefficiently. They produce smoke and gases by incomplete combustion, causing long-term respiratory health problems and deaths, projected at about 4000 people per day by 2030.

The development and efficient use of wood biomass has not been receiving adequate attention compared to other energy sources. This is despite the fact that wood biomass is the dominant source of energy for Sub-Saharan Africa, where about 93 percent of rural households and 58 percent of urban households rely on it for vital social, economic and environmental benefits. Complementary to creating employment for the poor segments of society that generally do not have access to formal employment, the contribution of the wood-based biomass energy sector to the national economy is significant and can easily surpass other economic sectors. Extrapolating to the whole of Sub-Saharan Africa, rough estimates indicate that the charcoal industry in Sub-Saharan Africa was worth more than US$8 billion in 2007, with more than 7 million people dependent on the sector for their livelihood. Predictions are that the economic value of the charcoal industry in Sub-Saharan Africa may exceed US$12 billion by 2030, employing almost 12 million people.

In terms of electricity generation, biomass power plants are said to have strong potential in the global power industry and could contribute to electricity generation in Africa. This
is because Africa has abundant biomass resources from agriculture and forestry. Biomass energy is known to be renewable, carbon neutral and cost-effective, compared to coal-based thermal power, hydropower, nuclear power, wind power and natural gas power. Given the continued importance of wood-based biomass energy in Sub-Saharan Africa, a sustainably designed and operated biomass energy sector could significantly reduce greenhouse gas emissions and help launch low carbon-growth strategies.

2. Feed Africa

Forestry does not entail only wood production. It is associated with food security and better nutrition in five important ways. These are the following:

- Direct contribution to subsistence food production due to the rich forest soils and the increasing dependence on wild, edible plants, nuts, condiments, mushrooms, tubers, leaves and fruits.
- Provision of energy, especially for cooking.
- Indispensable supplementation of animal protein supply (bushmeat and caterpillars).
- Income generation and employment; and
- Provision of ecosystem services (soil fertility enhancement, water storage, pollination, windbreaks, shelter).

Forest foods make major contributions to household food and nutrition security among forest-dependent communities in Africa. This is because they are rich in essential nutrients and the sale of these products in local and regional markets is a way to generate income locally. Nowadays, it is widely understood by researchers and development workers that food security does not directly translate into nutrition security, as even diets that provide enough calories do not provide a balance of needed nutrients. Research recommendations have also found that food from natural sources such as forest foods are rich in essential macro and micro nutrients. These recommendations encourage their promotion as important components of food needs of rural populations. With forest foods, rural dwellers can diversify their household diets and generate income by selling off excess food.

As recently as 2017, a high-level panel of experts on food security and nutrition from the Committee on World Food Security concluded that forests and trees contribute to food security and nutrition through four main channels: direct provision of food and protein supplementation; provision of energy, especially for cooking; income generation and employment; and the provision of ecosystem services that are essential for Food security and nutrition, human health and well-being.

Apart from the provision of wood and forest foods, forest land itself has many essential and varied uses, not least for environmental and ecosystem services, but also as arable land reserve for agricultural and infrastructure expansion. The potential of using trees for soil fertility enhancement
and agricultural productivity increases through landscape restoration approaches. This has been shown to be substantial. For instance, the promotion of non-timber forest products such as safou (*Dacryodes edulis*) in multi-strata agro-ecological systems, and fallows, have been shown to have great potential for food security, income generation and restoration of degraded lands.\(^{22, 23, 24, 25}\)

As another example, gum Arabic (*Acacia senegal*) trees constitute part of the rain-fed agricultural sector in the drylands of Africa. They provide a wide range of valuable environmental benefits in the form of anti-desertification insurance and soil fertility improvement of agricultural systems. These trees save farmers the cost of fertiliser applications. According to recent research findings, *Acacia senegal* trees provide 7.7 kg/ha of nitrogen. Ammonia nitrate fertiliser contains 46 percent nitrogen. This means that the amount of nitrogen provided by *Acacia senegal* trees could be available if 16.74 kg/ha of ammonia nitrate were applied. One kilogram of ammonia nitrate costs about US$ 4.7 per kg. Thus, gum stands can save considerable cost of supplying ammonia nitrate fertiliser. This can amount to approximately US$ 78 per hectare annually.\(^{26}\)

Other authors estimate that *Acacia senegal* agroforestry systems can increase livestock and crop productivity by mean factor scores of 2.52 and 2.53 respectively.\(^{27}\) In terms of employment and income generation, national employment in Sudan is 5 to 6 million in the Gum-belt.\(^{28}\) Gum Arabic contributes about 21 percent to the household income of gum farmers,\(^{29}\) US$ 134.2 million in 2013 or 17 percent of total Sudanese exports, and 13-15% of foreign exchange.\(^{30}\)

Overall, the internal rate of return for a 16-year rotation gum stand was calculated to be approximately 15.2 percent. When ecological benefits and social values associated with gum tree cultivation were considered, the recalculated internal rate of return for 16-year rotation gum stands jumped from 15.2 percent to approximately 61 percent.\(^{31}\)

Considering the foregoing highlights, global food security cannot be discussed in isolation of the role of forests and trees in the direct provisioning of food, nutrients and other environmental goods and services. Despite this understanding, governments continue to overlook food from natural sources such as forest foods in their policy guidelines. They address human problems related to food security and the provision of micro and macro nutrients for human wellbeing.\(^{32, 33}\) To reverse this policy neglect and oversight, research results have highlighted the importance of promoting forest foods as important components of the food needs of forest-dependent populations.

### 3. Industrialise Africa

Forest products (wood and non-wood) are vehicles of industrialisation. They contribute to industrialisation through forward and backward linkages, capital accumulation and
investments, value addition, green growth and employment creation. Aside from forest industries linked to forest concessions in natural forests, private commercial forest plantations drive huge industrial complexes in Eastern and Southern Africa.

Conceptually, value added is the difference between the costs of goods that an enterprise purchases and the value of the products that it sells, in addition to the amount available for payment of wages and salaries, interest, profits, sales taxes and depreciation.\(^34\) Adding value to the timber harvested from tropical forests is an important part of sustainable forest management, and it can generate many jobs and increase foreign exchange earnings.

As more raw timber is manufactured in a country into value-added or ‘downstream’ products such as doors, windows, furniture and joinery, more local people will find employment, and, importantly, convincing reasons for protecting the forest resource.\(^35\) The benefits of value addition to forest products in Africa will include among other things, green jobs creation, food security, revenue generation, increased foreign exchange earnings, improved livelihoods and industrialisation. Côte d’Ivoire and Nigeria, for instance, are the largest producers of cashew nuts in Africa. They however process less than 10 percent of cashew before export. Meanwhile, a ton of processed cashew nuts sells for $10,000 in the international market. That is in stark contrast to the $1,200/ton sale price of raw cashew nuts. In 2015, Côte d’Ivoire earned 377 billion FCFA (US$ 588.9 million) from the $1,200/ton sale price of raw cashew nuts. In 2015, Côte d’Ivoire earned 377 billion FCFA (US$ 588.9 million) from raw cashew nut output of 625,000 tons. It could more than double this amount if it were to increase in-country processing to above 10 per-cent.\(^36\)

Recent data from the National Cashew Association of Nigeria (NCAN) showed that Nigeria exported a total of 160,000 metric tons of raw cashew nuts valued at $300 million in 2016. However, if only 130,000 tons of raw cashew were roasted and supplied annually to Walmart Super Market chain in the United States, Nigeria could earn US$ 7 billion.\(^37\) In Nigeria, cashew is grown in smallholder farms and plantations. It provides livelihoods to over 300,000 families and 600,000 jobs in 28 of Nigeria’s 36 states.\(^38\)

In the Republic of Benin, cashew nuts represented 13.5 percent of the total value of exports in 2008. The industry employed about 200,000 planters\(^39\) but the level of in-country processing is today still very low, at about 10 percent.\(^40\)

Of the estimated 600,000 tons of shea nuts harvested in West Africa, about 350,000 tons are exported, mostly as raw nuts. The remaining 250,000 tons are processed and consumed locally. They are thus left out of the traded market.\(^41\) Benin is

### Table 2.

**Values (US$) and proportions (%) of wood products exported from 10 African countries**

<table>
<thead>
<tr>
<th>Product</th>
<th>Value (US$’1000) (%)</th>
<th>Cameroon</th>
<th>CAR</th>
<th>Congo Rep</th>
<th>Côte d’Ivoire</th>
<th>DR Congo</th>
<th>Gabon</th>
<th>Ghana</th>
<th>Liberia</th>
<th>Nigeria</th>
<th>Togo</th>
<th>South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial roundwood</td>
<td>994 497 (24.4)</td>
<td>315 422 (74.3)</td>
<td>167 066.5 (73.4)</td>
<td>33 925.7 (14.0)</td>
<td>55 403.7 (66.1)</td>
<td>188 244.3 (45.6)</td>
<td>386 008 (21.6)</td>
<td>99 143 (74.2)</td>
<td>75 006 (63.7)</td>
<td>188 644 (92.3)</td>
<td>9195 (0.4)</td>
<td></td>
</tr>
<tr>
<td>Sawwood</td>
<td>255 707.1 (62.8)</td>
<td>107 892 (25.4)</td>
<td>44 386.4 (19.5)</td>
<td>133 812.5 (55.1)</td>
<td>212 794 (25.4)</td>
<td>102 284.7 (23.7)</td>
<td>65 662 (36.6)</td>
<td>37 14 (2.78)</td>
<td>39 333 (33.2)</td>
<td>101 92 (5.0)</td>
<td>44 700 (1.8)</td>
<td></td>
</tr>
<tr>
<td>Plywood</td>
<td>89 036 (2.2)</td>
<td>125 (0.03)</td>
<td>669.5 (0.3)</td>
<td>18 484.9 (7.6)</td>
<td>491 (0.06)</td>
<td>31 585.6 (7.3)</td>
<td>38 414 (21.4)</td>
<td>64 (0.05)</td>
<td>146 (0.1)</td>
<td>52 71 (2.6)</td>
<td>3 4444 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Veneer sheets</td>
<td>43 1590 (10.6)</td>
<td>990 (0.23)</td>
<td>778 41 (3.4)</td>
<td>54 786.6 (22.6)</td>
<td>113 54 (1.4)</td>
<td>11 001 08 (25.5)</td>
<td>34 785.2 (19.4)</td>
<td>14 (0.01)</td>
<td>649 (0.6)</td>
<td>190 (0.09)</td>
<td>14 333 (5.8)</td>
<td></td>
</tr>
<tr>
<td>Newspaper</td>
<td>20 (0.0)</td>
<td>0.0</td>
<td>3 (0.0)</td>
<td>1 877 (0.08)</td>
<td>1 209 (0.14)</td>
<td>97 (0.0)</td>
<td>97 (0.05)</td>
<td>0.0</td>
<td>926 (0.8)</td>
<td>60 (0.03)</td>
<td>2 66004 (10.8)</td>
<td></td>
</tr>
<tr>
<td>Particle board and OSB</td>
<td>483 (0.01)</td>
<td>9 (0.0)</td>
<td>54 (0.7)</td>
<td>17 296 (7.6)</td>
<td>31 (0.0)</td>
<td>575 (0.01)</td>
<td>368 (0.02)</td>
<td>0.0</td>
<td>1084 (0.9)</td>
<td>36 (0.02)</td>
<td>63 774 (2.6)</td>
<td></td>
</tr>
<tr>
<td>Wood chips and particles</td>
<td>12 198 (0.04)</td>
<td>0.0</td>
<td>76 323 (3.4)</td>
<td>26 66 (0.01)</td>
<td>58 072 (6.9)</td>
<td>13 (0.05)</td>
<td>12 841 (19.4)</td>
<td>154 81 (0.9)</td>
<td>30 765 (23.01)</td>
<td>902 (0.8)</td>
<td>65 000 (0.03)</td>
<td>19 000 (77.2)</td>
</tr>
<tr>
<td>Total</td>
<td>407 4295 (100)</td>
<td>42 4438 (100)</td>
<td>227 6555 (100)</td>
<td>242 956 (100)</td>
<td>837 988 (100)</td>
<td>432 1939 (100)</td>
<td>179 2053 (100)</td>
<td>133 700 (100)</td>
<td>118 546 (100)</td>
<td>204 458 (100)</td>
<td>246 1530 (100)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ calculations from http://faostat3.fao.org/download/F/FO/E
the sixth world producer of shea-nuts. The country produces about 50,000 metric tons of shea nuts per year but processes only 0.2 percent into shea butter each year.\(^{42}\)

The scenario described above also holds true for timber products in most African countries where most wood is exported as logs or primary processed products like sawnwood. Meanwhile, secondary processed products like furniture have the potential value added of US$ 44-271/m\(^3\) of sawnwood that may be processed to finished products.\(^{43}\)

As Table 2 shows, only South Africa exports less than 10 percent of its wood products in the form of industrial roundwood, sawnwood, plywood and veneers, while it exports over 90 percent as newsprint, particle board, wood chips and particles. The reverse is true for countries like Cameroon, the Republic of Congo, Democratic Republic of Congo, Liberia and Togo (Table 2).

The statistics in Table 2 suggest that value addition through industrial processing of forest products could help diversify the economy of many African countries from reliance on oil revenues.

4. Integrate Africa

It is widely recognised from reports and scientific literature that intra-African trade has enormous potential for creating employment, catalysing investment, fostering economic growth, reducing poverty and enhancing food and energy security in Africa. The key ingredient to achieving these benefits is regional integration, which can propel real prosperity and growth.\(^{44}\)

The need for African integration is emphasised in various declarations over the years: the Organisation for African Unity (OAU) Charter, the Monrovia Declaration, the Lagos Plan of Action, the Abuja Treaty, the African Union Constitutive Act, and the New Economic Partnership for African Development (NEPAD).\(^{45}\) The Abuja Treaty elaborates on Africa’s Integration Vision. This is the treaty that established the African Economic Community in 1991. Today there are at least 14 regional economic communities\(^{46}\) in Africa that are officially or unofficially recognised by the African Union (AU), with some overlap in membership.\(^{47}\)

There is broad recognition among the various regional economic communities of Africa that regional integration is a win-win. One envisages a continent where there is truly free movement of people, goods, capital and services, with facilitated rights of establishment.\(^{48}\) The concept of ‘African solutions to African problems’ has become a compelling maxim of the African Union. It is an emotive, politically charged call that resonates equally among governments and civil society on the continent.\(^{49}\)

In complement to the above concepts is the belief that ‘Africa must feed Africa.’ This is a concept that the African Bank strongly promotes, and which it believes will require unlocking Africa’s potential to diversify its economies.\(^{50}\)

But despite these treaties and objectives, Africa is today still considered the world’s least connected continent in terms of ease of movement of people, trade, information and finance, both within and across borders. For instance, for all tradable commodities, intra-continental trade is still limited in Africa at 10-13 percent compared to other continents. In Europe that figure is 72 percent, while it is 52 percent for Asia, 48 percent for North America, and 26 per-cent for South and Central America.\(^{51}\) Based on official statistics, the total intra-African trade in all commodities reached $130.1 billion in 2011. This represented only about 11.3 percent of African trade with the world.\(^{52}\)
Noting these statistics and underpinnings, how is trade in forest products promoting intra-African trade and Africa’s integration? Why should intra-Africa trade in forest products be encouraged and promoted?

For further illustration, this paper provides the magnitude and trends of the wood product (logs, sawnwood, veneers and plywood) trade between selected forest endowed African countries and other African countries, as well as trade with other continents from 2006 to 2013. The results provide evidence of Africa’s efforts to foster trade in wood products over a wide geographical area of the continent, thus contributing to the promotion of African integration. For example, Ghana, Côte d’Ivoire and South Africa export their wood products to 25, 30 and 37 other African countries respectively. The result is respective intra-African trade shares of 30 percent, 15 percent and 13 percent. The number of intra-African partner countries and trade shares are smaller but highly indicative for such countries as Cameroon, Central African Republic, Gabon and the Democratic Republic of Congo (Table 3).

With the population of Africa expected to rise to 2.5 billion by 2050 and to 4 billion by the turn of the century, important questions for the forestry sector could include: How will Africa meet the wood product needs of this growing population? Will Africa simply depend on ever increasing wood product imports? Is such a scenario unacceptable? How much does Africa spend annually on importing wood products?

Table 3.
Intra-African trade partner countries and shares (%) for four wood products in 10 countries (2006-2013)

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of partner African countries</th>
<th>Total export value (US$*1000)</th>
<th>Proportion of intra-African trade (%)</th>
<th>Proportion of exports to other continents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>22</td>
<td>4074297</td>
<td>4.25</td>
<td>(Asia 22.67; Europe 54.5; NA 3.82, SA 0.35, Oceania 0.18; Unspecified 14.22)</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>19</td>
<td>427438</td>
<td>11.03</td>
<td>(Asia 36.36; Europe 33.1; NA 1.19, SA 0.06, Oceania 0; Unspecified 18.23)</td>
</tr>
<tr>
<td>Congo Rep</td>
<td>16</td>
<td>2275655</td>
<td>1.53</td>
<td>(Asia 54.44; Europe 23.63; NA 2.46, SA 0.1, Oceania 0.01; Unspecified 17.77)</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>30</td>
<td>2429536</td>
<td>14.89</td>
<td>(Asia 15.66; Europe 47.64; NA 5.02, SA 0.23, Oceania 0.05; Unspecified 16.51)</td>
</tr>
<tr>
<td>DR Congo</td>
<td>12</td>
<td>837988</td>
<td>3.45</td>
<td>(Asia 13.47; Europe 61.95; NA 2.02, SA 0, Oceania 0.08; Unspecified 19.04)</td>
</tr>
<tr>
<td>Gabon</td>
<td>19</td>
<td>4321939</td>
<td>5.66</td>
<td>(Asia 33.75; Europe 41.91; NA 0.08, SA 0.04, Oceania 0.06; Unspecified 17.77)</td>
</tr>
<tr>
<td>Ghana</td>
<td>25</td>
<td>1792053</td>
<td>29.99</td>
<td>(Asia 25.15; Europe 18.34; NA 5.17, SA 0.13, Oceania 0.84; Unspecified 20.4)</td>
</tr>
<tr>
<td>Liberia</td>
<td>3</td>
<td>133700</td>
<td>0.03</td>
<td>(Asia 30.57; Europe 36.04; NA 0.58, SA 0, Oceania 0; Unspecified 32.78)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>7</td>
<td>118546</td>
<td>2.9</td>
<td>(Asia 74.21; Europe 15.72; NA 0.62, SA 0.31, Oceania 0.05; Unspecified 6.19)</td>
</tr>
<tr>
<td>Togo</td>
<td>9</td>
<td>204458</td>
<td>2.71</td>
<td>(Asia 18.51; Europe 2.01; NA 0.01, SA 0, Oceania 0; Unspecified 76.77)</td>
</tr>
<tr>
<td>South Africa</td>
<td>37</td>
<td>2461530</td>
<td>12.59</td>
<td>(Asia 70.36; Europe 5.2; NA 0.4, SA 0.38, Oceania 0.34; unspecified 10.73)</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations from FAO forestry statistics: Forestry trade flows - forest products bilateral trade statistics from 1997 onwards. NA=North America, SA=South America
By simply turning African into a relatively wood product, self-sufficient continent, the many billions of foreign currencies spent on importing can be spent on other domestic needs, without recourse to expensive international capital markets. With this understanding, many authors believe that Africa’s economic success depends on the ability of the continent’s nations to trade with one another. There is also growing political commitment and recognition by African leaders that economic diversification is needed to create jobs and sustain growth in Africa. Its geographical position, increase in income and the size of Africa’s middle class over the past decade all suggest a potential and ready market for regional trade in goods and services.

Therefore, boosting intra-African trade in all its ramifications is seen as one of the key opportunistic pillars to achieve the objectives of regional integration as inscribed in the Abuja Treaty. By enhancing regional trade, African countries will also overcome the burden in time and cost associated with exporting to distant markets. For instance, a 2016 evaluation conducted by Trade Mark East Africa on the impact of non-tariff barriers to trade in East Africa showed that removal of key barriers had contributed to over 14 percent reduction in the time taken to import goods from each East African country. This resulted in the reduction in the cost of transporting a 40-foot container from Mombassa to Kigali from US$ 6,500 in 2011 to US$ 4,800 today. Evaluators estimated savings of about US$ 7 million on the Mombassa-Kigali route alone. Increasing intra-African trade will encourage wood processing within Africa. There will be lesser trade in logs, and African countries will earn more from the export of processed products. In 2011, for example, the Democratic Republic of Congo earned an average of US$547/m³ for exporting its wood products to other African countries, and US$360.5/m³ for exporting them to countries outside Africa. There was roughly a 52 percent gain associated with intra-African trade.

Forest products remain a very strategic resource in ensuring regional trade and integration in Africa. This is because nature has ensured that some parts are forest endowed and others are forest deficient. For example, forest deficient countries like Morocco, Tunisia, Egypt, Libya, and Chad import significant volumes of wood from forest endowed countries like Cameroon, DRC, Gabon and the Republic of Congo. The importing countries have less than 10 percent of their land area under forest cover. The 12 least forested countries in Africa have total African forest cover of just about 1.5 percent but they account for over 26 percent of the African population. This suggests that the wood needs of a huge segment of the continent’s population must come from elsewhere, and probably from more forest endowed countries under well-developed intra-African trade arrangements, or from other continents at higher costs. Ghana seems to be taking the lead in ensuring intra-African, as well as trade in wood products among regional economic
communities. For instance, in 2015, the major markets for all Ghana’s wood products were Asia (59 percent), Africa (19 percent) and Europe (15 percent). The African markets’ share accounted for 67,950 cubic metres. This was valued at Euro 26.93 million, with the Economic Community of West African States (ECOWAS) countries accounting for the largest share at 82 per-cent of the sales to African countries.61

Forest products as friendship cord and inter-continental integration

Aside from the integration of Africa through forest products, trade in forest products may also constitute veritable friendship cords and be an international currency puller in Africa. The destinations of various wood products from 10 selected African countries to various continents demonstrate how trade can attract international friendships and hard currency. The results show that forest products are among the most internationally distributed commodities and they attract foreign exchange earnings. As far back as 1970, for example, Nigerian petroleum products attracted 21 international currencies, while timber products were sold to 34 countries.52

More recently, from 2006 to 2014, Cameroon exported forest products to 104 countries, including 41 European countries, 26 Asian, 22 African, 12 North and South American and three Oceania countries. Côte d’Ivoire exported to 105 countries, 30 in Africa, 26 in Asia, 36 in Europe, three in North America, seven in South America and three in Oceania. South Africa had a wider spread in 113 countries, including 37 in Africa, 25 in Asia, 32 in Europe, 13 in South America, three in North America and three in Oceania (Table 4).

Since international trade is heavily influenced by geopolitics and relations, a small commodity that is in demanded by a large number of countries may prove to be a platform for friendship and a reason for peaceful existence between nations. Thus, forest products in most forest endowed countries may have a smaller contribution as a foreign exchange earner but will remain a valuable element of wider international relations and economic integration.

The African Natural Resources Centre is working to promote intra-African as well as inter-continental trade in forest resources. This can contribute seriously to the promotion of Africa’s integration by stimulating good trade policies that will encourage the movement of forest products from well endowed countries to the less endowed. The African Natural Resources Centre can also help promote good governance and strengthen value chains of key natural resources, working alongside partners, including the private sector.

5. Improve the quality of life for the people of Africa

The presence of forests and the good management of forestry resources can certainly help improve the quality of life of the African people. Over 1.6 billion people in the world

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Table 4.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of trade partner countries reported</th>
<th>Spread to countries by continents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>104</td>
<td>(Africa 22; Asia 26; Europe 41; NA 3, SA 9, Oceania 3)</td>
</tr>
<tr>
<td>CAR</td>
<td>70</td>
<td>(Africa 19; Asia 15; Europe 31; NA 2, SA 3, Oceania 2)</td>
</tr>
<tr>
<td>Congo Rep</td>
<td>84</td>
<td>(Africa 16; Asia 19; Europe 38; NA 3, SA 5, Oceania 3)</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>105</td>
<td>(Africa 30; Asia 26; Europe 36; NA 3, SA 7, Oceania 3)</td>
</tr>
<tr>
<td>DR Congo</td>
<td>61</td>
<td>(Africa 12; Asia 14; Europe 30; NA 2, SA 0, Oceania 3)</td>
</tr>
<tr>
<td>Gabon</td>
<td>92</td>
<td>(Africa 19; Asia 14; Europe 30; NA 2, SA 0, Oceania 3)</td>
</tr>
<tr>
<td>Ghana</td>
<td>110</td>
<td>(Asia 27; Europe 40; NA 3, SA10, Oceania 4)</td>
</tr>
<tr>
<td>Liberia</td>
<td>26</td>
<td>(Africa 3; Asia 7; Europe 14; NA 2, SA 0, Oceania 0)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>55</td>
<td>(Africa 7; Asia 14; Europe 26; NA 2, SA 4, Oceania 2)</td>
</tr>
<tr>
<td>Togo</td>
<td>29</td>
<td>(Africa 9; Asia 7; Europe 12; NA 1, SA 0, Oceania 0)</td>
</tr>
<tr>
<td>South Africa</td>
<td>113</td>
<td>(Africa 37; Asia 25; Europe 32; NA 3, SA 13, Oceania 3)</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations from FAOSTAT-Forestry: Forestry trade flows - forest products bilateral trade statistics from 1997 onwards. NA=North America, SA=South America

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African Natural Resources Centre
depend heavily on forest resources for their livelihoods. Of this number, 1.2 billion people in developing countries use trees on farms to generate food and income. The International Fund for Agricultural Development (IFAD), found that about 80 percent of the developing country population uses forest products on a daily basis. It also found that about 75 percent of poor people that live in rural areas depend on forests for subsistence, agriculture, employment and related income generation activities. Indeed, the three necessities of life - air, water and food - are to some extent the major products of the forest. Green plants are the source of oxygen, without which life on earth is impossible.

Forests constitute one of the climatic buffers on which mankind depends. Water is a necessity for life, and the link between forests and the provision of water has been well-established. Forestry has been associated with food production through direct contribution to subsistence food production, indispensable supplementation of animal protein supply, and increasing dependence on a variety of wild plants, condiments, nuts, fruits and vegetables. Forestry contributes greatly to GDP and employment in most African countries. For instance, in South Africa, the forest products industry contributes some 9 percent to the overall export of manufactured goods. It earns net foreign exchange of approximately R8.8 billion and employs 170,000 people, and between 390,000 and 560,000 people are dependent on plantation forestry for their livelihoods.

In Sudan, export earnings from gum Arabic alone were US$134.2 million in 2013. This represented some 17 percent of total Sudanese exports and 13 to 15 percent of foreign exchange earned. National level employment stood at about 5 to 6 million people across the Gum-belt. The Congo Basin forests are of great economic importance. They contribute up to 18 percent to the GDP of the Central African Republic and 20 percent to the foreign exchange earnings of Cameroon. Overall, forest rents contribute at least 5 percent to the GDP of 21 African countries, including the top six with an average of 16 percent and above during the last 11 years (2005-2015). Forest rents in Liberia have the highest contribution at 32 percent, followed by Burundi at 23 percent, Democratic Republic of Congo at 19 percent, and Ethiopia at 17 percent (Figure 2).
Indirectly, the use of money earned from the sale of forest products enables local communities to purchase basic needs like medicines and a variety of stable foods to diversify their diets. Forest products in Africa also provide benefits in terms of herbal medicines for healthcare. Forest products and services, therefore, contribute to the overall wellbeing of the African people by providing income, housing, cultural integrity, biodiversity conservation, sanitation, health and environmental sustainability (through micro-climates from shelter belts, pollination of agricultural crops, watershed protection, erosion and sedimentation controls etc). Overall, forest resources appear to provide two main outcomes for poor households: One is poverty avoidance or mitigation – in which forest resources serve as subsistence ‘safety nets’ that people can fall back on in lean times or when crops fail. This is a low income ‘gap filler’ to make a little cash from a few products managed or cultivated as a sideline. The second outcome is poverty reduction – in which forest resources help lift the household out of poverty by functioning as a source of permanent income.

**Challenges and opportunities**

Forestry as a business endeavour can contribute enormously to the green economy. It can also help boost state revenues in many African countries. However, the realisation of these opportunities depends on the governance of the forest industry. The ways in which forests are managed, and local value added is provided make a difference. Stringent policy measures can lead to rapid and concrete outcomes.

As a raw material, wood provides a resilient basis for a variety of conversion processes, which are yet to be tried in most African forested countries. In some developed countries, forestry has been found to offer a major potential solution to endemic rural under-employment and unemployment. It is also a pace-maker for the primary sector. Basically, the challenges for forestry to the African Development Bank’s High 5 priorities essentially dwell on poor governance arrangements and the high trade deficits associated with low value addition and raw material export tendencies.

Conceptually, value added is the difference between the costs of goods purchased by an enterprise and the value of the products it sells in addition to the amount available for payment of wages and salaries, interest, profits, sales taxes and depreciation. It would be useful to devise and implement a downstream processing policy that ensures higher conversion rates and the development of quality products. African countries seem to be lagging behind, at least in terms of taking advantage of the abundant raw materials and opportunities for value addition for increased economic gains and job creation. In most timber producing African countries, for only three customarily produced primary processed wood products, the aggregate import and export values with countries outside Africa in 2014 were US$ 3.3 billion and US$ 409.7 million respectively. This leaves a trade deficit of about US$ 2.9 billion for the continent (Table 5).

The trade deficits in Africa are even more glaring when secondary and tertiary processed wood products are considered. At the country level, from 2006 to 2013, Liberia had negative trade balances of US$ 11.7 million and US$ 167, 850 associated with the importation of plywood and veneers respectively. Trade deficits associated with three secondary processed wood products and eight tertiary processed wood products were US$ 21.75 million and US$ 11.62 million respectively. These trade deficits for Liberia, a forest-endowed country, add up to US$ 45.25 million over a period of eight years, or US$ 5.66 million per year.

<table>
<thead>
<tr>
<th>African Region</th>
<th>Sawnwood (US$)*1000</th>
<th>Veneers (US$)*1000</th>
<th>Plywood (US$)*1000</th>
<th>Trade balance (Export-import) *1000 US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>21459</td>
<td>45438</td>
<td>871</td>
<td>5845</td>
</tr>
<tr>
<td>Central</td>
<td>1285</td>
<td>1014</td>
<td>179790</td>
<td>2005</td>
</tr>
<tr>
<td>Northern</td>
<td>3033</td>
<td>2330942</td>
<td>1356</td>
<td>108730</td>
</tr>
<tr>
<td>Southern</td>
<td>8839</td>
<td>40550</td>
<td>6962</td>
<td>16048</td>
</tr>
<tr>
<td>Western</td>
<td>2984</td>
<td>6726</td>
<td>87817</td>
<td>3286</td>
</tr>
<tr>
<td>Africa</td>
<td>37600</td>
<td>2424670</td>
<td>276796</td>
<td>135914</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations from http://faostat3.fao.org/download/F/FO/E
Preliminary analyses (2006-2013) of trade in eight tertiary wood products for five forest-endowed central African countries and seven west African countries show trade deficits of over US$ 731 million and approximately US$ 6 billion respectively. The outcry is that over the same period (2006-2013), Indonesia had a trade surplus of US$ 28.1 billion for the eight tertiary wood products. Vietnam’s furniture exports alone were just over US$ 7 billion in 2016.85 The implication is that the importation of processed wood products greatly outweigh the economic benefits that African countries may derive from the export of primary wood products. Meanwhile, small scale forest enterprises based on furniture and carpentry have the potential value added of US$ 44-271/m3 of sawnwood processed to finished products.

Overall, African countries suffer from great trade deficits associated with the importation of secondary processed wood products, while Asian and Latin American countries are basically making trade surpluses from the same products. For instance, from 2006 to 2013, while African countries (shaded in blue in the graph below) made a total trade deficit of over US$ 1 billion, Asian countries (green) made a trade surplus of US$ 66.3 billion. Latin American countries (brown) made US$ 6.8 billion over the same period, linked to the three secondary processed wood products (Figure 3).

Conclusions and Recommendations

Forestry is intricately connected to many other industrial sectors, resulting in better productive functions in the economy. This is because most wood products are intermediate goods and are used as raw materials for other industries, such as construction, furniture, packaging, printing, and textile manufacturing.

Forest products are known to be green, renewable, recyclable and versatile. They can be fed into different industrialisation processes to maximise and harness their full potential as African commodities. In this regard, the connection between forestry and some of the critical indicators of economic development such as capital, industrialisation, foreign exchange earnings, labour and employment are achievable with the right supportive policies in place. The forestry sector remains one of the primary means for ensuring climate change adaptation and mitigation for improved and resilient rural and urban livelihoods in Africa.

Scientific evidence confirms that the trade potential for wood products in Africa is huge. However, recorded trade between African countries appears low. This suggests the
importance of guiding policy towards enhancing trade, transforming illegal trade to legal trade in these products, breaking down the barriers to trade and promoting the integration of markets.

The importance of ensuring that policy decisions are backed by data (trends, magnitudes, trade flows in volume and values and by product categories), cannot be emphasised enough for the promotion the forestry sector. Such decisions can lead to improving the wood-based industry, and a better understanding of illegalities in the sector and how to contain them. It can help remove barriers to trade, and impact many other decisions that, cumulatively, will contribute to creating a continental economy that will strengthen each country and create a prosperous and industrialised Africa. This would be in line with the developmental aspirations of the African Union Agenda 2063.

It is crucial for timber producing African countries to define the degree of self-sufficiency for all wood product categories to avoid the huge trade deficits associated with the importation of further processed wood products. This will require a forest and forest industry basic plan that can serve as a national policy measure on forestry, subject to regular reviews to reflect realities on wood use volumes in the short, medium and long terms.87

The changing character of African economies, however, will require continuous adjustments on the roles of forest resources in contributing to human wellbeing and environmental sustainability. In that dynamic situation, the forestry sector will warrant further development only if it can supply its products with increasing efficiency - with the aim of producing social, economic and environmental benefits. Forestry is only good if it produces the goods and services that people want and can afford.

Thus, in a situation of underdevelopment, the forester cannot forget that his discipline is somewhere between the natural, economic and social sciences.88 In this circumstance, the question of forestry and the contribution to the African Development High 5 priorities strategies deserves continually detailed analysis of both on how to relate the present requirements to future needs and to temporise the essentially ‘natural machine’ with the latest social and technological concepts of economic, social and environmental benefits. The success of African forestry in this direction will enhance the possibility of Africa’s take-off to sustained economic growth and development considerably.

**Recommendations**

The above discussion and statistics on the forestry sector in Africa suggest a high level of dependence of the people of Africa on forests. Development programmes in Africa, therefore, have to look at food security, household wellbeing and income generation from not just traditional agriculture but in combination with forest products that are important for household nutrition, health, income generation and employment opportunities. A major prerequisite though will require recognition by policy-makers of the importance of the forest-product value chains in Africa’s development - especially through the setting up of favourable business climates and facilitating access to inputs, finance, training and transport. As it conducts operations in its regional member countries, the African Development Bank should intensify policy analysis, knowledge generation and support for forest-product value chains. Leveraging forestry in implementing the High 5 priorities is a strategic investment that will lead to sound development outcomes. Policy initiatives could include the following actions:

- Encourage value addition to forest products, notably wood and non-wood forest products.
- Promote biomass energy.
- Urge the use of industrial plantations of desirable tree species.
- Promote sustainable forest management.
- Integrate forestry and agriculture for climate change resilient productive systems and agroforestry.
- Promote intra-African trade in forest products and related commodities.
- Encourage good governance and better institutional arrangements.

**For more information, contact:** Modibo Traore or Julius Chupezi Tieguhong; Email: d.traore@afdb.org, j.tieguhong@afdb.org

African Natural Resources Centre
African Development Bank Group
Immeuble du Centre de Commerce International d’Abidjan
CCIA
Avenue Jean Paul II
01 BP 1387, Abidjan, Côte d’Ivoire
ecnr_info@afdb.org
www.afdb.org/anrc
Notes

2. The African Development High5s are: 1) Feed Africa; 2) Light up and Power Africa; 3) Industrialise Africa; 4) Integrate Africa; and 5) Improve the quality of life for the people of Africa.
4. Lundgren ibid
5. Nair and Tieguhong 2004
6. ibid
7. Tieguhong et al. in press
11. IEA ibid
13. AFREA ibid
15. IEA ibid
20. Fungo et al. 2015. ibid
29. Agbota ibid
33. USDA ibid
35. Tieguhong et al. in press, ibid
37. Includes: AMU (Arab Maghreb Union), CEMAC (Communauté Economique et Monétaire des Etats de l’Afrique Centrale), CEN-SAD (Communauté des Etats Sahel-Saharan), COMESA (Common Market for Eastern and Southern Africa), EAC (East African Community), ECCAS (Economic Community of Central African States), ECOWAS (Economic Community of West African States), IGAD (Intergovernmental Authority on Development), SADC (Southern African Development Community), SACU (Southern Africa Customs Union) and UEMOA (Union Economique et Monétaire Ouest Africaine).
39. Tumuhimbise C. 2013. Africa’s vision for trade in services. Regional Meeting on promoting services sector development and trade-led growth in Africa, organized by UNTAD in collaboration with the African Union Commission (AUC) and the UN Economic Commission for Africa (UNECA) and in partnership with the International Organisation of La Francophonie. Addis Ababa, Ethiopia, 12-13 September.
Adesina A. 2015. ibid


UNCTAD 2013. ibid

Adesina A. 2015. ibid

Tieguhong et al. ibid


Tieguhong et al. ibid.

Algeria, Burundi, Comoros, Djibouti, Egypt, Ethiopia, Lesotho, Libya, Mauritania, Niger, Tunisia, Western Sahara


Adeyoju 1975, ibid


81 Ibid.

Cameroon, Central African Republic, Republic of Congo, Democratic Republic of Congo and Gabon

Benin, Côte d’Ivoire, Ghana, Liberia, Mali, Nigeria and Togo

84 Tieguhong et al. in prep. ibid.


88 Adeyoju 1975. ibid