Forest Futures online survey results

Summary

Crop land expansion is most often mentioned as the largest driver of forest loss. The expectation of the respondents is that the drivers of deforestation in 2050 will be quite similar to those of today though cropland expansion is reducing in importance (more than pasture expansion) as well as timber and fuelwood extraction, while urban / infrastructure expansion is growing in importance. In Africa, fuelwood extraction is thought to become a much less important driver of forest loss compared to today. Several respondents (notably in arid zones) also mentioned the increasing importance of climate change as driver of forest loss.

The largest driver of forest area increase was thought to be policies/subsidies, followed by the abandonment of agricultural activities. To a much lower extent this is thought to be driven by the economic demand for wood.

Respondents expected developments in the agricultural sector to have larger impacts on forest loss than reducing pressure from wood extraction on forest through an increased supply from planted forests. Notably in Africa, Central America and South Asia yield increases or improved efficiency in agriculture are expected to result in a reduction of forest loss, while in South America and SE Asia most respondents didn’t believe this will have much impact.

Overall, demand for industrial fuelwood is expected to increase more than demand for household fuelwood though opinions were quite polarized concerning the expectations of future industrial fuelwood demand. When comparing the answers by region it was striking that in Europe a much higher increase in demand for industrial fuelwood was expected compared to the other regions. This may be related to Europe’s 20-2020 commitment on renewable energy. Also remarkable was the wide variation in opinions on the future demand for household fuelwood which were quite polarized for Africa and Asia.

Most respondents expect a slight increase in trade of forest products (the expectations of the African respondents were slightly more conservative concerning trade increment though opinions again vary widely here). Future wood supply is coming more and more from planted forests while supply from primary forest is dropping steeply (especially in Africa, Asia and Europe). The only region where the wood supply share from planted forests was expected to decrease was Europe where an increase in imports was expected.

Most respondents expect only a slight increase in protected forest area, very few think a substantial increase is to be expected suggesting the Aichi targets are unlikely to be fully met. The only region where a decline in protected forest area was expected (averaging the replies) was Africa.
The importance of forests for food security is thought highest in Africa where >95% of respondents acknowledged its importance and lowest in Oceania. Most respondents expect forest’s contribution to food security to remain stable or somewhat increase. It is interesting to note here that respondents working at the global level expected a decrease in its contribution to food security while respondents working in the regions rather expected the contrary which may indicate the forest’s importance to food security to be locally recognized but globally underestimated.

On average, forest activities were thought to give a somewhat important contribution to poverty alleviation. The largest increase in this contribution is expected from the employment in ecotourism, followed by taxes and royalties and employment in wood processing. Many regions expected an increased economic contribution from wood processing while the contribution of wood harvesting was expected to remain stable.

Forest tenure is thought to be unclear by more than 50% of the respondents for Asia (S and SE Asia), Africa (N and W&C Africa) and North and Central America (C America) and with the exception of Europe, in most regions this is thought to result in more forest loss.
Questionnaire
The Global Forest Resources Assessment (FRA) 2015 will explore forest resource dynamics up to 2030/2050 at the sub-regional scale through a scenario based modeling exercise called Forest Futures. We are soliciting your expert input for the creation of scenarios by giving us your vision on future directions of change. Your contribution is highly appreciated!

Total number of responses = 155

X1 Please indicate in which sub-region you work
Select global if you work at the international level. PLEASE FILL OUT THE QUESTIONS IN THE REMAINDER OF THE QUESTIONNAIRE AS APPLICABLE TO YOUR COUNTRY or to the international level if you select global.

Responses by region

X2 Please indicate in what sector you work

Responses by sector
Forest area dynamics

The world’s population is growing rapidly: the UN predicts a 30% population increase to 9 billion people by 2050. Per capita consumption is increasing as well, especially in fast-growing economies, resulting in an unprecedented demand for resources. FAO envisions agricultural production to increase with 60% by 2050 to meet demand, most of which will come from higher yields and more intensive land use. Thanks to intensification, FAO predicts that the increased food demand can be met by an increase in arable land of only 5%, although large regional variation in the need for additional crop land is expected. In the following questions we ask you to give your perception of what will happen with forest land up to the year 2050 in your country.

1. What is happening to the forest area in your country?
1. Decreasing forest area (n=72)
1a. What is the largest driver of forest loss in your country?
1b. What do you expect the largest driver of forest loss to be in your country around the year 2050?
You can select several if you think they are equally important, otherwise only select the most important driver
- Cropland expansion
- Pastureland expansion
- Timber extraction
- Fuelwood extraction
- Mining
- Urban / infrastructure expansion
- I don’t expect there to be forest loss around 2050
- I don’t have an opinion
- Other:

Summary of all responses (n=72):

**Largest driver of forest loss now and in 2050**

<table>
<thead>
<tr>
<th>Driver</th>
<th>Now</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropland expansion</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Pastureland expansion</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Timber extraction</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Fuelwood extraction</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Mining</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Urban / infrastructure expansion</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Climate change</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

NB Climate change is probably underrated in this graph since it wasn’t among the prefilled options
Largest drivers of forest loss now and in 2050 by region
(weighted by gross forest loss)

- Global
  - Now
  - 2050
- Africa
  - Now
  - 2050
- Asia
  - Now
  - 2050
- S America
  - Now
  - 2050
- N & C America
  - Now
  - 2050
- Europe (including Russia)
  - Now
  - 2050
- Oceania
  - Now
  - 2050

Legend:
- Cropland expansion
- Pasture land expansion
- Timber extraction
- Fuelwood extraction
- Mining
- Urban / infrastructure expansion
- Climate change

Gross forest loss ('000ha/year)

NB the responses on the importance of drivers of forest loss by region are weighted by the annual gross forest loss for the period 1990-2005 ('000ha/yr) for the region concerned from the FRA global remote sensing survey.
1c. Do you think yield increases or improved efficiency in agriculture will reduce forest loss between now and 2050?
1d. Do you think an increase in wood supply from planted forests will reduce forest loss in your country between now and 2050?
   Yes, these will reduce forest loss substantially
   Yes, but the effect will be minor
   No, I don’t believe this will have a notable impact on forest area
   I don’t have an opinion

Summary of all responses (n=71):

Reduced deforestation expected from developments in agriculture and forest sector

![Bar chart showing reduced deforestation from improved agriculture and increased wood supply from planted forest](image-url)
Do you think yield increases/improved efficiency in agriculture will reduce forest loss between now and 2050?

- No
- Yes but minor effect on forest loss
- Yes this would reduce forest loss substantially

Do you think an increase in wood supply from planted forests will reduce forest loss in your country between now and 2050?

- No
- Yes but minor effect on forest loss
- Yes this would reduce forest loss substantially
Increasing forest area (n=45)

1a. What is the main driver of forest area increase in your country?
Select only the most important driver
- Policies and subsidies
- Economic demand for forest products
- I don’t have an opinion
- Other:

Summary of all responses (n=45):

Main drivers of forest area increase

- Abandonment of agricultural activities
- Policies and subsidies
- Economic demand for forest products
- Other

What is the main driver of forest area increase in your country?
1b. How is forest area increase best characterized in your country?
You can select more than one answer
- Afforestation for protective functions and conservation
- Afforestation for wood production
- Natural expansion of forest
- I don’t have an opinion
- Other:

How is forest area increase best characterized in your country?
Forest area dynamics (continued)

2. What do you think forest area will be like in the year 2050 in your country? (n=151)
   - Forest area will be higher than current extent
   - Forest area will be more or less like current extent
   - Forest area will be lower than current extent
   - I don’t have an opinion

What do you think forest area will be like in the year 2050 in your country?

Number of responses

<table>
<thead>
<tr>
<th>Region</th>
<th>Higher</th>
<th>Similar</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S America</td>
<td></td>
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<td></td>
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<tr>
<td>N&amp;C America</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Europe (including Russia)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Oceania</td>
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<td></td>
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</tr>
</tbody>
</table>

Higher | Similar | Lower
Energy
Fossil fuels are becoming scarcer by the day and the demand for renewable energy is on the rise: a 2011 IPCC expert panel suggested the use of biomass for energy could increase by 2-6 times current levels in 2050. However, a new source of energy could be discovered and its application widespread thus reducing the demand for woodfuel.

3. What will happen to demand for household fuelwood?
4. What will happen to demand for industrial fuelwood?
   - Demand will decrease substantially
   - Demand will decrease slightly
   - Demand will remain stable
   - Demand will increase slightly
   - Demand will increase substantially
   - I don’t have an opinion

Summary of all responses (n=154):

**Expected change in fuelwood demand**

<table>
<thead>
<tr>
<th>Expected Change</th>
<th>Demand household fuelwood</th>
<th>Demand industrial fuelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial decrease</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Slight decrease</td>
<td>29</td>
<td>12</td>
</tr>
<tr>
<td>Remain stable</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Slight increase</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>Substantial increase</td>
<td>25</td>
<td>36</td>
</tr>
</tbody>
</table>
Expected change in future demand household fuelwood

Expected change in future demand industrial fuelwood
Forest products
Over the last decades, globalization has opened up local markets and increased trade among nations and continents. The commitments made at Rio+20 for a greener economy could stimulate a trend towards an increased use of wood for construction and other innovative products. However, the recent financial crisis has led to countries proposing trade barriers to protect their own markets and resulted in decreased demands for wood products in most regions.

5. What do you think will happen with trade of forest products towards the year 2050?
Decrease: National protectionism will prevail, international trade will decline
Stable: The share of international trade will remain stable, either because of high transport costs or national/regional market protection mechanisms
Increase (<30%): International trade will somewhat increase (<30% of current levels)
Increase (>30%): Free markets will prevail, international trade will expand substantially (>30% increase of current levels)
I don't have an opinion

Summary of all responses (n=135):

Expected trend in future trade forest products

Expected trend in future forest product trade

Global  Africa  Asia  S America  N&C America  Europe (including Russia)  Oceania
6. What will happen with demand for roundwood in your country?

- Demand will decrease substantially
- Demand will decrease slightly
- Demand will remain stable
- Demand will increase slightly
- Demand will increase substantially
- I don’t have an opinion

Summary of all responses (n=138):

![Expected change in roundwood demand](Image)

![Expected change in roundwood demand](Image)
7a. What is the major source of wood supply in your country?
7b. What will be the major source of wood supply in your country around the year 2050?

Primary forest [0%, <50%, >50%, 100%]
Other naturally regenerated forest [0%, <50%, >50%, 100%]
Planted forest [0%, <50%, >50%, 100%]
Other land with tree cover [0%, <50%, >50%, 100%]
Imports [0%, <50%, >50%, 100%]

Responses are weighted as follows 0%: x 0, <50%: x 1, >50%: x 2, 100%: x 3

Summary of all weighted responses (n=130)

Where will wood come from in the future?

<table>
<thead>
<tr>
<th>Source</th>
<th>Now</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary forest</td>
<td>97</td>
<td>73</td>
</tr>
<tr>
<td>Other naturally regenerated forest</td>
<td>115</td>
<td>113</td>
</tr>
<tr>
<td>Planted forest</td>
<td>172</td>
<td>192</td>
</tr>
<tr>
<td>Other land with tree cover</td>
<td>66</td>
<td>63</td>
</tr>
</tbody>
</table>
Where will wood come from in the future? (by region)

- **Global**
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **Africa**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **Asia**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **S. America**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **N&C America**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **Europe**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

- **Oceania**
  - Imports
  - Other land with tree cover
  - Planted forest
  - Other naturally regenerated forest
  - Primary forest

*Weighted responses*
Forest conservation

Never before in history has the world had more legally protected forest areas than we have today: 12.5% of the forests are in protected areas. The Convention on Biological Diversity (CBD) sets an aim to have at least 17% of terrestrial areas protected by the year 2020 (the Aichi targets) but an increase in strictly protected forest areas could have a trade-off with sustainably managed production forest.

8. What do you think will happen with the area of protected forest in your country towards the year 2050?

The area will decrease substantially compared to the current area of protected forest
The area will decrease slightly compared to the current area of protected forest
The area of protected forest will remain stable
The area will increase slightly compared to the current area of protected forest
The area will increase substantially compared to the current area of protected forest
I don’t have an opinion

Summary of all responses (n=152):

Expected change in extent of protected forest areas

<table>
<thead>
<tr>
<th>Change</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease substantially</td>
<td>18</td>
</tr>
<tr>
<td>Decrease slightly</td>
<td>17</td>
</tr>
<tr>
<td>Remain stable</td>
<td>33</td>
</tr>
<tr>
<td>Increase slightly</td>
<td>72</td>
</tr>
<tr>
<td>Increase substantially</td>
<td>12</td>
</tr>
</tbody>
</table>
Socio-economic functions of forest resources

More than a billion of the world's poorest people rely on forests and trees on farms to provide food, energy and cash income. Though the direct contribution of the forest sector to a country's GDP is for most countries modest, they can play a significant role in poverty reduction in rural areas and can function as safety nets when populations are faced with sudden harvest losses and economic turmoil. Please indicate your perception of trends in the socio-economic importance of the forest by answering the following questions.

9. Do forests play an important role in food security in your country and will they do so in the future? (n=124)

- They do not significantly contribute to food security now, nor will they in the future
- They contribute significantly to food security now, but will be less important for food security in the future
- They contribute significantly to food security now and will maintain doing so in the future
- They contribute significantly to food security now and will be even more important for food security in the future
- I don't have an opinion
- Other:
10a. Do forests play an important role in poverty reduction in your country and if so which of the following forest activities contribute to this.
10b. Will forests play an important role in poverty reduction in your country around the year 2050 and if so which of the following forest activities will contribute to this

- Employment in wood harvesting [Not important, Somewhat important, Important, Very important]
- Employment in wood processing [Not important, Somewhat important, Important, Very important]
- Employment in ecotourism [Not important, Somewhat important, Important, Very important]
- Collection of (non-wood) forest products [Not important, Somewhat important, Important, Very important]
- Royalties, taxes or other kind of fees paid by timber companies [Not important, Somewhat important, Important, Very important]

Only responses included where respondents rated both now and 2050. Responses are weighted as follows (Not important x 1 + Somewhat important x 2 + Important x 3 + Very important x 4)/(all responses)

NB Respondents from some regions noted the activity was contributing to the economy but they were not necessarily contributing to poverty alleviation.

Summary of all weighted responses (n=129)

Expected change in contribution to poverty reduction from different forest activities
<table>
<thead>
<tr>
<th>Region</th>
<th>Employment in wood harvesting</th>
<th>Employment in wood processing</th>
<th>Employment in ecotourism</th>
<th>Collection of (non-wood) forest products</th>
<th>Royalties, taxes or other kind of fees paid by timber...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Africa</td>
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<td>Asia</td>
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<td>S America</td>
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<tr>
<td>N&amp;C America</td>
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<tr>
<td>Europe</td>
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<tr>
<td>Oceania</td>
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</tr>
</tbody>
</table>

**Expected change in contribution to poverty reduction from different forest activities**

<table>
<thead>
<tr>
<th>Region</th>
<th>Weighted responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>now</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Oceania**

**Europe**

**N&C America**

**S America**

**Asia**

**Africa**

**Global**

**Collection of (non-wood) forest products**

**Employment in ecotourism**

**Employment in wood processing**

**Employment in wood harvesting**

**Royalties, taxes or other kind of fees paid by timber...**
11. Is the forest tenure situation clear and will this affect forest loss?

- Forest tenure situation is clear
- Forest tenure situation is unclear but I don’t expect this to have implications for forest area
- Forest tenure situation is unclear and I expect this to result in more forest loss
- I don’t have an opinion
- Other:

Is the forest tenure situation clear?

![Chart showing number of responses for different regions and tenure situations](image_url)
Is the unclear forest tenure situation resulting in forest area loss?

- Not resulting in forest area loss
- Resulting in forest area loss

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of responses</th>
<th>Not resulting in forest area loss</th>
<th>Resulting in forest area loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Asia</td>
<td>13</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>S America</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>N&amp;C America</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Europe</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Oceania</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix

Responses by region and subregion

<table>
<thead>
<tr>
<th>Region</th>
<th>Subregion</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Western and Central Africa</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Eastern and Southern Africa</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Northern Africa</td>
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</tr>
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<td>Asia</td>
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<td>27</td>
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<td>South-east Asia</td>
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<tr>
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<td>South Asia</td>
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<td>Western and Central Asia</td>
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<td>Central America</td>
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<td></td>
<td>North America</td>
<td>11</td>
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<tr>
<td>Europe (including Russia)</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>Oceania</td>
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<td>8</td>
</tr>
<tr>
<td><strong>Total number of responses</strong></td>
<td></td>
<td><strong>155</strong></td>
</tr>
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