Supplementary Information for: Comparing Community Needs and REDD+ Activities for Capacity Building and Forest Protection in the Equateur Province of the Democratic Republic of Congo

Table S1 Gender of survey respondents for each village and town

Gender	Bongonde Drapeau	Buya 1	Mbandaka	Total
Male	44	37	30	111
Female	19	26	1	46

Table S2 Age range of respondents for each village and town

Age Range	Bongonde Drapeau	Buya 1	Mbandaka	Total
18–30	10	12	1	23
31–40	14	15	4	33
41–50	17	17	9	43
51–60	15	12	17	44
Over 61	7	7	0	14
Total	**63**	**63**	**31**	**157**

Table S3 Self-identified status/strata of survey respondents for each village and town.

Status/strata	Village/Town			Total
	Boya 1	Bongonde Drapeau	Mbandaka	
Indigenous People	9	9	2	**20**
Venants	9	9	8	**26**
Rights Holders	9	9	—	**18**
Pauvres	9	9	6	**24**
Middle Class	9	9	12	**30**
Rich	9	9	2	**20**
Mothers	9	9	—	**18**
Business people	0	0	1	**1**
Total	**63**	**63**	**30**	

Table S4 Sectoral breakdown of survey respondents

Community forest users	2
Agriculture	106
Government/public sector – provincial level	5
Government/public sector – national level	11
REDD+ or related project secretariat, or administration body	1
Forest-based industry	0
Commerce	8
Finance	1
NGO – Environment	7
NGO – Social	1
Research/Academic/University	6
Zoological organisation	0
Other	9
Total	**157**

Table S5 Levels and Types of Capacity Building

Scales	
Individual	Improving the capacity of individuals, such as training.
Organisational	Improving capacity of small groups or organisations (includes communities).
Sectoral	Improving the capacity within a sector, e.g. agricultural, forestry.
Institutional	Improving the interactions between organisations, departments etc. to improve decision-making and governance.
Systemic	Improving the 'enabling environment' in which activities occur.
Types	
Technical	Improving skills or knowledge in particular area of expertise, e.g. mapping, planning, engagement, communication etc.
Functional	Improving management capacities needed to formulate, implement and review policies, strategies, programmes and projects
Participative	Improving the openness of processes and the involvement of stakeholders (includes awareness raising)
Integrative	Improving coordination and cooperation across stakeholders, organisations, sectors, departments etc.
Strategic	Improving the development and implementation of comprehensive and long-term objectives.
Adaptive	Improving the ability of a system to adjust to change, to take advantage of opportunities, or to cope with the consequences

Table S6: Examples of scales and types of capacity building, with examples relevant to REDD+

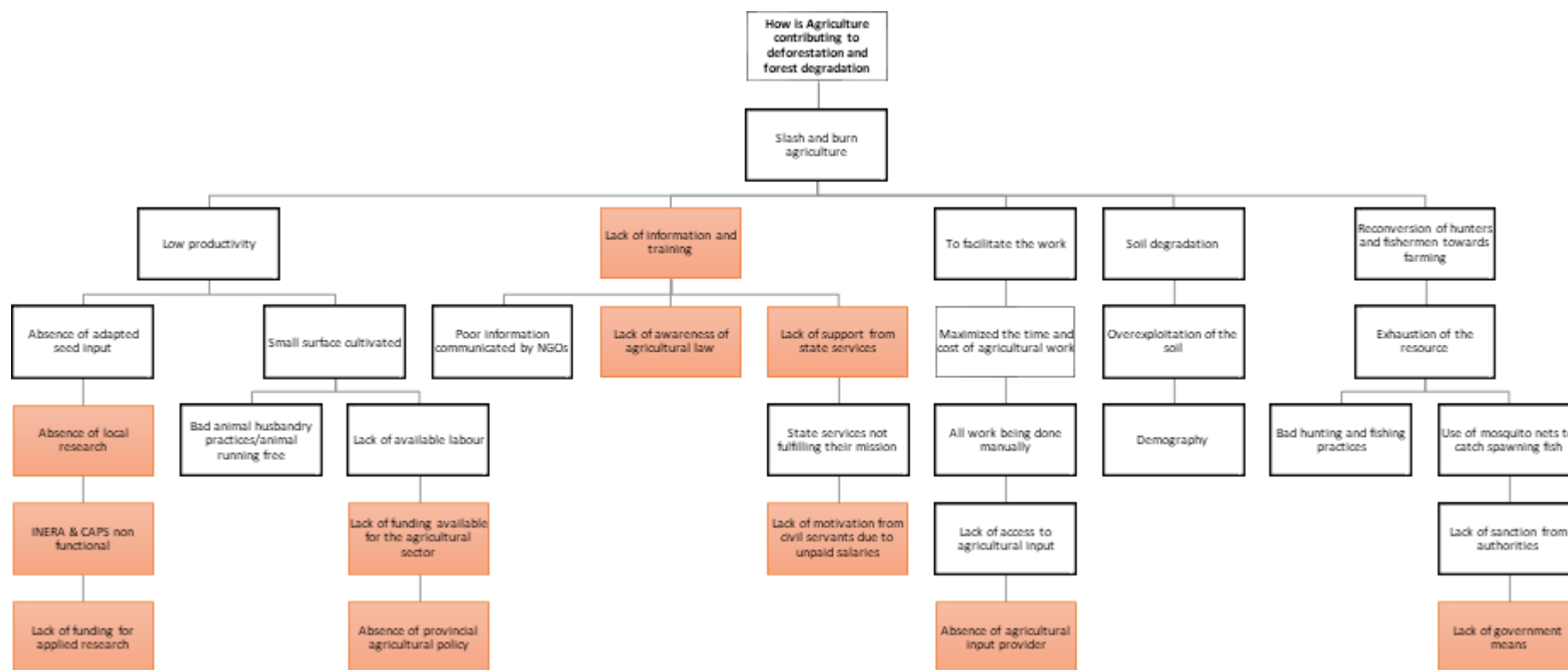|		TYPE					
		Technical	**Functional**	**Participative**	**Integrative**	**Strategic**	**Adaptive**
SCALE	**Individual**	Forest ranger training or permaculture workshops	Management training or entrepreneurial workshops	Resources to support the involvement of community members in workshops	Agricultural roundtables with industry, community and government	Planning training	Training in new agricultural techniques
	Organisational	Building the GIS capabilities of forestry department	Resources to improve internal policies and procedures in a local NGO.	Community engagement training and awareness	Developing peak body associations	Developing community-based plans	Developing community-level climate change adaptation plans
	Sectoral	Ensuring knowledge sharing between forestry and environment departments	Developing policies to identify responsibilities and resources across a sector	Developing forestry FPIC policies and procedures	Inter-departmental roundtables	Creating forest management plan	Introducing new crop varieties
	Institutional	Improving community engagement skills of civil servants	Developing policies for transparent decision-making	Increasing the ability of stakeholders to engage with and influence the political arena and the socio-economic system	Developing policies to reduce conflict between departments	Developing regional strategic landscape planning	Developing climate change adaptation plans
	Systemic	Including sustainability into education system at all levels	Creating necessary governance arrangements for improving integrity and legitimacy of government decision-making	Building participative and deliberative systems of governance	Encouraging integrated and holistic approaches to be taken at all levels	Encouraging long term thinking at all levels	Supporting ongoing change management, adaptation and willingness to transform

Figure S1: Problem tree for the agricultural sector. (INERA – National Institute for Agronomic Study and Research, CAPS – Adaptation Center for Principal Seeds.)

Figure S2: Forest loss and degradation problem tree for governance and legal aspects

Figure S3: Forest loss and degradation problem tree for capacity building.

How is wood energy contributing to deforestation and forest degradation

Large demand for wood energy around urban and town centers

- Easy access to biomass energy
  - Lack of implementation of regulation concerning wood energy
    - Absence of civil servant to enforce the regulation
  - Proximity and availability of wood
    - Proximity of the forest
- Lack of alternatives
  - Lack of infrastructures
  - Cost of alternatives
    - Profitability for providers
      - Lack of means of buyers
- Use of wood energy by households
  - Lack of capacity to develop alternative energies
    - Low income of households
    - Lack of investment in the energy sector
      - Lack of political leadership
        - Lack of political will
- Proximity of urban center
  - Rural exodus
    - Lack of entrepreneurship in the agricultural sector
      - Lack of training in self-help initiatives
- High natality
  - Tradition
  - Lack of cultural activities and hobbies
    - Low valuation of cultural centers and hobbies
  - Low level of education
    - Lack of access to education
      - Low income of parents
        - Lack of jobs
          - Lack of income generating activities
- Income generating activities for households
  - Lack of jobs
  - Low diversification of the agricultural sector
    - Lack of creativity of the middle class
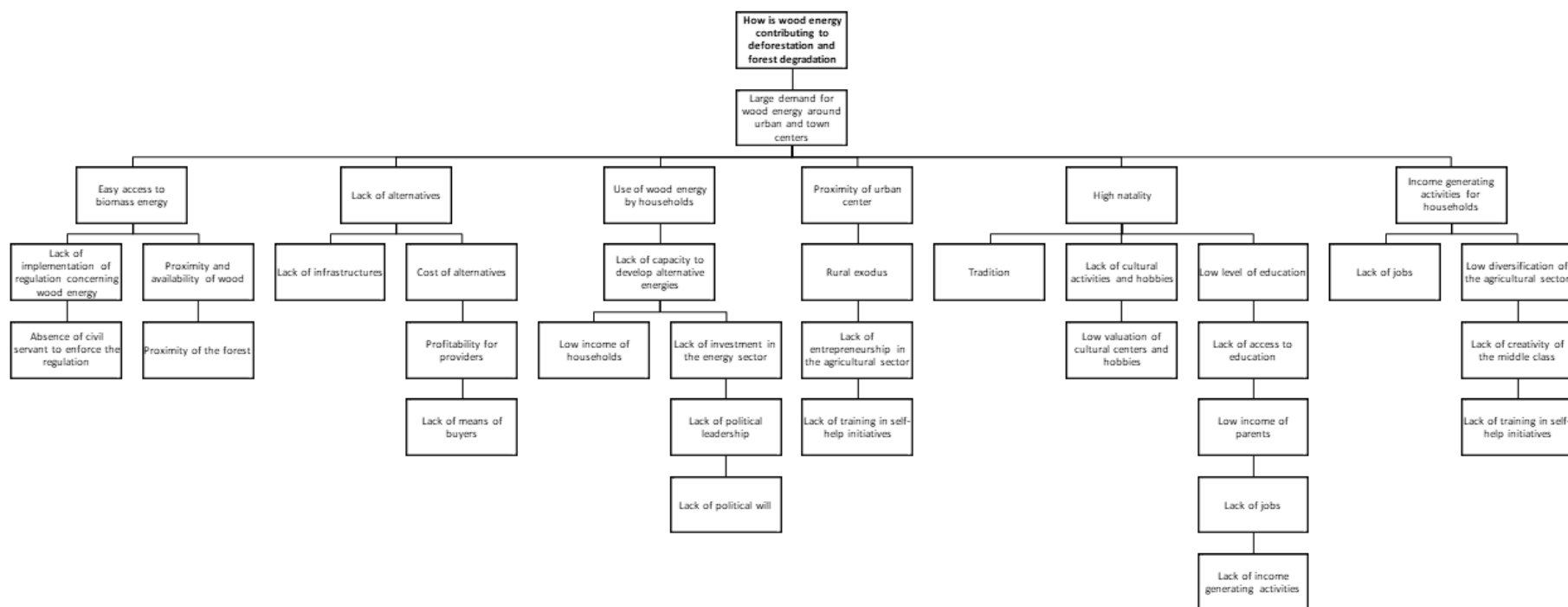   - Lack of training in self-help initiatives

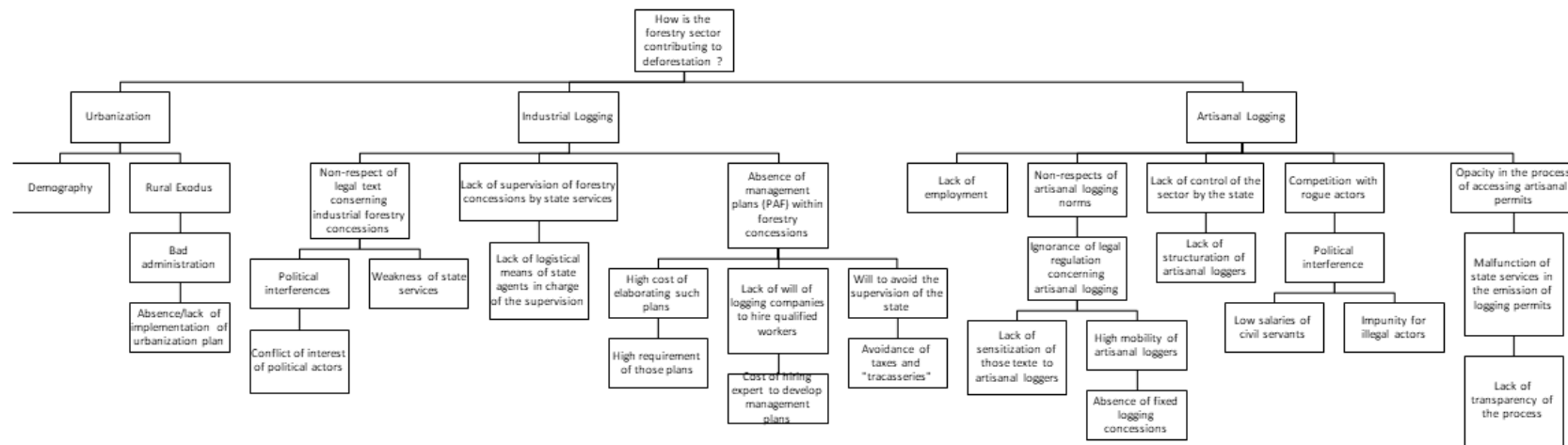*Figure S4: Forest loss and degradation problem tree for biomass sector (not used in analysis).*

Figure S5: Forest loss and degradation problem tree for forestry sector (not used in analysis).

Table S7: Capacity type and scale assessment of REDD+ capacity building activities

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	**Scale**
Pillar One Agriculture		
1.3. Promote participation in sustainable production roundtables	Technical	Individual Organisational
1.5. Support the structuring of local communities into Local Development Committees (LDCs)	Functional	Institutional
1.6. Support and strengthen the capacities of steering and consultation frameworks at the higher levels of local governance (Groups, Sectors, Territories)	Functional Participative	Organisational Institutional
1.7. To support any form of initiative related to sustainable agriculture aimed at organizing stakeholders in the commodity chains	Technical Functional Participative	Organisational Sectoral
1.11. Making the Development Committees responsible for the management of development plans at local level (cf. Spatial Planning Pillar)	Strategic	Institutional
1.13. Supporting the emergence of financial services in rural areas in support of sustainable agricultural practices	Functional	Organisational Sectoral
1.14. Experimenting with various financial instruments to support agricultural operators involved in a REDD+ approach	Functional	Organisational Sectoral
1.15. Support research for the development of technical reference systems for sustainable agriculture, on the links between agriculture and forestry	Technical	Organisational Sectoral
1.16. Renewing technical services and building their capacity on sustainable agriculture technologies	Technical Functional	Organisational
1.17. Strengthen the capacities of peasant and village organizations, intermediary NGOs and private operators in the same direction	Integrative	Organisational
	Technical	Individual

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	Scale
1.18. Create model farms with a centre for rural innovation and plant propagation to support zoning plans	Participatory Adaptive	Organisational
Pillar 2 Energy		
2.6. Developing national expertise in the various types of alternative energy to wood energy and sustainable wood energy production	Technical	Sectoral
2.7. Develop national expertise in energy efficiency	Technical	Sectoral
2.10. Raising awareness and supporting potential project holders	Participative Integrative	Sectoral
Pillar 3 Forests		
A/ Sustainable management of forest carbon stocks (Permanent production forests and protected forests)		
3.A.7. Promote greater processing of extracted wood	Technical	Sectoral
3.A.9. Strengthen forest control by the administration or by independent observation, focusing on areas where illegal logging is strongest	Functional	Institutional
3.A.10. Strengthen collaboration between the forest administration, border administrations and the judiciary in order to ensure the follow-up and eventual treatment of infractions	Integrative	Institutional
3.A.11. Strengthen the capacity of stakeholders to verify the implementation of the law and sanctions	Functional Participative	Institutional
3.A.12. Establish upward and downward channels for the flow of forest information	Functional	Sectoral

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	**Scale**
		Institutional
3.A.13. Support the definition and implementation of the national system for monitoring and controlling the exploitation of forest resources, in synergy with the FLEGT process	Technical Functional Integrative	Sectoral
3.A.18. Raise awareness of sustainable forest management practices and build local capacity to support communities towards the sustainable management of their forest resources	Technical Participative	Organisational
3.A.19. Accompany local communities in the establishment of community forest concessions and the elaboration of its management plan	Functional Participative?	Organisational
3.A.20. Support the professionalization of micro-forestry operators from local communities who will be able to obtain community logging permits in these concessions	Functional	Organisational
3.A.21. Develop and implement a framework for contractualization between local communities and artisanal forest operators	Functional	Institutional
3.A.22. Strengthen the capacity of all stakeholders to monitor the proper implementation of forest management and development plans	Functional Participative Integrative	Sectoral
3.A.26. Strengthen the capacity of stakeholders to monitor the proper implementation of the artisanal mining law	Functional Participative	Sectoral Institutional
	Functional	Institutional

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	Scale
3.A.27. Ensure FPIC is respected in the contractual arrangements between local communities and artisanal forest operators.	Participative	
3.A.28. Build the capacities of artisanal forest operators and support them in obtaining legal logging permits and formalizing the chain of custody	Functional	Individual Organisational
B/ Conservation of forest carbon stocks (mainly classified forests)		
3.B.5. Supporting community-based conservation and sustainable collaborative natural resource management	Functional Participative	Organisational Sectoral
3.B.6. Supporting the structuring of local communities and indigenous peoples and strengthening their capacities in the long term	Functional	Institutional
C/ Increasing forest carbon stocks (Permanent production forests, protected forests, classified forests and outside existing forests)		
3.C.5. Raising awareness and building capacity on B/R and NAS and the opportunities provided by carbon finance	Functional Participative	Sectoral
3.C.7. Promote the production from these plantations to meet national needs, ensure traceability and certification, and give them a comparative advantage	Functional	Sectoral
Pillar 4: Governance		
4.2. Test, improve, and use online tools for cross-monitoring REDD+ implementation and impact: interconnection of the SNSF, the National REDD+ Registry, and the Moabi	Technical Integrative	Organisational Sectoral
4.3. Operationalizing the national REDD+ fund	Functional	Institutional

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	**Scale**
4.6. Identify and involve the relevant authorities in the planning, implementation and monitoring phase of the activities	Participative	Organisational Institutional
4.7. Strengthen the capacity of stakeholders to play their roles in planning, implementing and monitoring REDD+	Technical Functional	Individual Organisational
4.9. Support consultation and conflict management frameworks for programming, monitoring-evaluation and control of REDD activities at the national, provincial and local levels	Participative (Deliberative) Functional	Sectoral Institutional
4.10. Support the emergence and capacity building of national service companies in support of REDD+	Functional	Organisational
4.12. Implement monitoring mechanisms on the ground to deal with complaints received and compliance with national standards	Functional	Institutional
4.14. Strengthen the implementation of national legal instruments and popularize them	Technical Functional Participative	Institutional
Pillar 5 Demography		
5.4. Increasing girls' access to education	Functional Participative	Sectoral
Pillar 6: Regional Planning		
6.3. Strengthen the capacities of the state bodies in charge of producing geographic and socio-economic data (IGC and INS) and relaunch the Common Geographic Reference System (CGRS)	Technical	Organisational Institutional
6.16. Popularize and train the various stakeholders in the implementation of the selected methodologies (manual and training) [methodologies for microzoning at the village terroir level (participatory mapping)]	Technical	Individual Organisational
6.18. Support consultation structures to follow up the land-use and micro-zoning plans	Technical	Individual

REDD+ Strategy Capacity Building Activities	Capacity Needs	
	Type	**Scale**
	Participative	Organisational
6.19. Training and accreditation of independent experts in microzoning and verification of socio-environmental standards	Technical	Individual Organisational
Pillar 7: Land		
7.9. Strengthen land administration capacities in the areas targeted for REDD+ investments (local land services)	Functional	Institutional
7.10. Train stakeholders in the implementation of the methodologies for the identification of defined land rights (manual and training)	Technical Functional	Individual Organisational
7.11. Forming a service to offer support local land administration for the identification of land rights	Functional	Institutional
7.12. Train and accredit experts on general socio-environmental standards and land rights identification methodology(ies).	Technical Functional	Individual Organisational
7.13. Popularize the land law and build the capacities of consultation frameworks and various stakeholders	Participative Functional	Organisational