The Rufford Foundation
Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Busha Teshome Tolera
Project title	Cluster analysis of wood product industry for sustainable forest management in Ethiopia
RSG reference	21795-1
Reporting period	July 2017- July 2018
Amount of grant	£4870
Your email address	bayush051@yahoo.com
Date of this report	August 26, 2018

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Analyse of sectors linkage along the value chain of wood product for the conservation of forest resource			■	The actors in the wood product of sawn and particle board were identified. In addition, the actor's perception and activities toward the forest resource conservation and development were recognised.
Analyse the competitiveness and forest management practices of the wood product industries			■	The factors affecting the medium and large wood product industries were identified using Porter's diamond model. The result on enhancing factor indicate human resource, market size, customer's adoption of new product and customer satisfaction and role of government contribute to the wood product industries competitiveness. The constraining findings are physical resource, capital, and infrastructure and knowledge level of international buyer.
Assess the innovation potential of the medium and large wood product industries			■	The sectoral innovation systems were analysed in terms of identification of actor, institutions and interactions. The role and responsibilities of actors in the emergence of innovation in the wood product industry of Ethiopia. The enhancing and constraining factors of innovation activities of the wood product industries were identified. The innovations were identified in the wood product industries.
Examining options for the future forest resource conservation and management			■	The experts were indicated the future forest resource of Ethiopia. Accordingly, three options were developed business as usual; growth and transformation plan and expert opinion are the intervention options to the forest development and conservation of Ethiopia.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Getting data at wood product industry level was a challenge. The sources of the challenges were some industries do not often record the volume of products produced and sold and revenue earned and costs incurred. Hence it had been delayed to get the data. Furthermore had an impact to delayed the analysis, write up and to proceed in preparing for the publications.

3. Briefly describe the three most important outcomes of your project.

i) The role of actors was identified toward the forest resource conservation and development in the wood product industry. The study identifies the determinants of competitiveness in the wood product industry using Porter's diamond model. The result indicates that the enhancing factor are human resource, market size, customer's adoption of new product and customer satisfaction and the role of government contribute to the wood product industries competitiveness. The constraining findings are physical resource, capital, and infrastructure and knowledge level of international buyer.

ii) All actors in the value chain of the wood product had positive profit and with limited value-added activity along the chain. Producing and marketing of wood products contribute to the livelihood of the community while enhancing the farm tree planting activities. The main actors along the value chain are smallholder household/government enterprises/communities, village traders, wood product industries, wholesalers and retailers are involved in commercial activities. The supporting actors are, trade office, state forest enterprise, micro and small enterprise office and cooperative office are those that provide support services, such as credit agencies, training and business license providers. The producer - village traders- wholesaler –retailer- consumer channel was the longest channel of the wood product in the study areas.

iii) The sectoral innovation systems analyses function and activities of the actors to enable innovation in the wood product industries indicate the weak linkage of the sectors to promote innovation. According to the interview of the industry, the information sources of the innovation can be categorised as internal and external in the wood product industry of Ethiopia. Both chip wood and sawmill industries have confirmed that the innovation sources could be the knowledge developed in-house industry, adopted exogenous technology, the work experience of employee and continuous trial and error made over time. According to the interview, the endogenous sources are not sufficient for innovation activities to need to be supported by exogenous knowledge. The wood product industries informed that they need innovation to address the efficiency of input resource utilisation and to device innovative products delivering and services systems that will increase market share and drive shareholder value. The assessment on the options by the expert toward forest resource conservation indicates that in both businesses as usual and growth and transformation plan the exploitation and deforestation will be increasing, with minimal innervation to development. On the other had the expert

option demonstrate if the government consider some factors about land tenure and credit facilities there will be an expansion of plantation and conservation of the remnant natural forest.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The communities/households are one of the suppliers of the wood product to the market. Analysing the benefit share and constraints from the wood product along the chain including the household level create a platform to work together to better benefit from the market while increasing the forest resource development and conservation. It was demonstrated that smallholders having a tree on the farm and living in the forest area received more benefits and improved their livelihoods and enhance to manage forest resources on their land. It was shown that the noticeable lack of integration among sectoral activities is severely affecting forest conservation and utilisation measures. The analyses contribute to policies to promote the integration of actors at the local level to forest management practices, which have an impact on the poor and women livelihoods as well. In this case, smallholders improve participation in the management of forests under the natural resource with extinct species.

5. Are there any plans to continue this work?

I have a plan to work on focusing on the development of micro and small enterprises and illegal forest supply as an action research. The research was conducted in Jima, which was one of the study site data was collected. It is located in south western part of the country. It is the areas were the remnant natural forest is available in the country. At the same time there is a large number of micro and small enterprises, which are producing furniture, and household utensils and usually distributed to the country. These enterprises are using the raw material mainly supply from illegally and the prohibited species to be harvested. In this case, an urgent intervention to identify the species preference of enterprises to reduce the pressure on the remaining indigenous species. In addition, identify the mechanism to manage the illegal supply in the forest area with the participation of the community to provide for policy makers. The area is covered with extinct indigenous tree species, in this case for further options need to expand planation tree cover. This area of research was not conducted yet, essentially intervention from both conservation and development perspective is native forest resource. I am planning an action research on expanding tree preferred tree planation for enterprises to use for production and creating skill and linking to market.

6. How do you plan to share the results of your work with others?

I started sharing the research results in participating conferences. For the household, the project held village meetings to give feedback to communities, and summary reports were left at the village offices. Besides I am working to produce scientific articles for the global research and development community. In addition, plan to

produce a national guide/manual to share with the extension workers and development practitioners, regional and national policy makers.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

The data collection took more than the planned time. The research required data from the revenue and cost by inputs of the wood product, which had taken my time to found the data accordingly. In addition, the familiarisation to develop trust took time for the industries. Hence it had been delayed to go further on the analysis, write up and to proceed in using the results for the preparing publications.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Expendable supplies (camera and Tape recorder)	270	270		
Printing and copying and literature	650	450	-200	Cost for printing material below than expected
Local travel cost	1550	1750	+200	The local travel expense was higher than estimated due to the increase in tariff
Cost of service related to field work, survey	2150	2150		
Communication and miscellaneous	250	250		
Total	4870	4870		

9. Looking ahead, what do you feel are the important next steps?

In Ethiopia the rise in population and economic growth increase demand for wood products for construction and wood fuel consumption. The wood comes from different forest resources, ranging from trees grown on farm and plantations to natural high forests and woodlands. However, the commercially important species are over exploited to the extent of being endangered. The wood product industries activities of wood production are not supported with innovations to improve the limited resource utilisation efficiency. The actors of the forest development and conservation through innovation activities have been organised under different ministries. In this case, the actors need to integrate and coordinated which result to reduce the pressure on the over-exploitation of the forest resources.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did The Rufford Foundation receive any publicity during the course of your work?

I have acknowledged the Rufford foundation while I participated in the conferences. I will acknowledge in the publications. I inform the colleagues and the researchers in the research study site that I had a grant from Rufford Foundation.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Name	Role
Yeshiber Dagnew	Guidance on actors along the value chain
Hailu Ebisa	Familiarising with actors along the value chain
Tatek Dejene (PhD)	Scientific guidance on conservation
Getachew Eshetu	Guidance on wood industries
Alemayheu Negasa (PhD)	Scientific guidance on wood product selections
Hiwot Alemneh	Briefing the innovation activities in the wood industries at the Ministry of industry
8 persons	Data collectors

12. Any other comments?

I wholeheartedly thank Rufford Foundation for providing me the opportunity. The research results will be published and accessed on line. The grants supported to me have been beneficial to both local community, actors along the value chain and wood product industries and for my own career as I am a researcher guarantee to promote to the next level researcher.