RIU

Trees for fodder for the poor

Validated RNRRS Output.

Poor urban and rural people with no land can still benefit from the income-earning opportunities brought by growing fodder—by using trees rather than more traditional sources. Research conducted in China proved that this was possible if they partnered with land owners in order to grow useful fodder trees on otherwise unused pieces of land (like that at the edge of roads, paths and fields). The project also identified the best fodder-tree options, and simple techniques to allay partners' fears that the trees might shade their crops. The project's findings have now been successfully applied in a range of countries, including Afghanistan, Bangladesh, India, Nepal, Indonesia and Pakistan.

Project Ref: **FRP21:**
Topic: **2. Better Lives for Livestock Keepers: Improved Livestock & Fodder**
Lead Organisation: **Biodiversity International, UK**
Source: **Forestry Research Programme**

Document Contents:

Description,

Description

FRP21

A.   Description of the research output(s)

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

Afghanistan, Bangladesh, China, India, Nepal,

Target Audiences for this content:

Livestock farmers, Forest-dependent poor,

1. Working title of output or cluster of outputs.

Pro poor strategies for agroforestry development based on new partnerships, novel uses for tree fodder and "optimised" tree planting pattern

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

Forestry Research Programme then picked up by European Commission and Private Sector

3. Provide relevant R numbers and partners

R5398. Chinese Academy of Forestry, Silsoe College, BioDiversity International Ltd, Fountain Renewable Resources Ltd

*4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? **(max. 400 words).** This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be used to select your output when held in a database.*

The overall objective that the project was contributing to was methods for increasing the relevance of agroforestry practice and related research to **urban and rural poor** in developing countries How could poor people with **little or no land** benefit from trees? The idea was that tree leaves could be used to **generate income** as an **animal feed** supplement and by **planting trees at the edge of fields, roads, canals and pathways or widely in fields**, **partnerships** could be encouraged where a "main crop" could be taken by a specialist or wealthier partner and **by-products** or **other crops** could be taken by a generalist or opportunist poorer partner. One major scientific output was a simple model that predicts light available to adjacent crops or **grazing lands** for various shapes and arrangements of trees. Light was chosen not because it was the biological limiting factor but because the idiomatic understanding of shade was is a major **psychological factor or barrier**. Another output was an inexpensive **lightmeter (phytometer)** using plants. The project also improved the use of low cost methods for detecting **fodder value** using simple methane generation test with rumen bacteria. This could be used for **goats, sheep, and cows**. The project also developed methods for non-ruminants such as **pigs**. The main tree species were **Poplar and Paulownia**. The main crop species were **wheat, ginger, onions, and cotton**. The most powerful development output was "unforeseen" at the time. This was the formation of tripartite **pro-poor partnerships between the urban/rural poor, landowner (often government) and the private sector**. Although the research was conducted in the poorest counties in **China** in Anhui and Shandong province, the main area of application turned out to be **Afghanistan, Bangladesh, India, Nepal, Indonesia and Pakistan**. The work led to many new projects funded by the **EC, National Governments and the private sector** involving changes in **Governance**.

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	Technology	Service	Process or Methodology	Policy	Other Please specify
X	X	X	X	X	Reform in governance and procedures

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

The outputs are applicable to all crops and trees, but he main benefit appears with short season crops and deciduous trees

7. What production system(s) does/could the output(s) focus upon?
Please tick one or more of the following options. Leave blank if not applicable

Semi-Arid	High potential	Hillsides	Forest-Agriculture	Peri-urban	Land water	Tropical moist forest	Cross-cutting
X	X	X	X	X			X

8. What farming system(s) does the output(s) focus upon?
Please tick one or more of the following options (see Annex B for definitions).
Leave blank if not applicable

Smallholder rainfed humid	Irrigated	Wetland rice based	Smallholder rainfed highland	Smallholder rainfed dry/cold	Dualistic	Coastal artisanal fishing
X	X	X	X	X	X	

9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (**max. 300 words**).

Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

The project purpose if formulated after completion was pro-poor strategies for agroforestry partnerships formulated by end of project. The "output" attained from the project was clustered with outputs from non RNRRS outputs from World Bank, EC and private sector Initiatives in India, Bangladesh and Vietnam. These outputs were; optimised environmental stewardship characterised and Sources of private sector finance for agroforestry identified. Poplar based approaches in India, Nepal, Bangladesh and Afghanistan have led to major socio-economic impact using government "greening" and agricultural policy and instruments linked to the development of poplar based **industry for construction, ply and match production**. It has been estimated that over 1 million people have been raised above the poverty line by this approach in China and India**. The main impact pathway for the future is in the application of this approach to fruit and or nut based agroforestry in remote and densely populated areas linked to job creation. This requires market based research and surveys of the**

private sector.

<u>**Editor's Note:**</u>

Other sections are not available.