

CONSERVATION  
LIBRARY, KENSINGTON



**JOURNAL**

080020-07

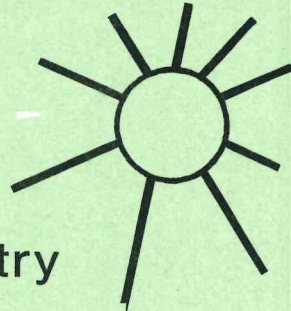
**AGROFORESTRY UPDATE**

CALM LIBRARY ARCHIVE  
NOT FOR LOAN

7 (Apr 1988)

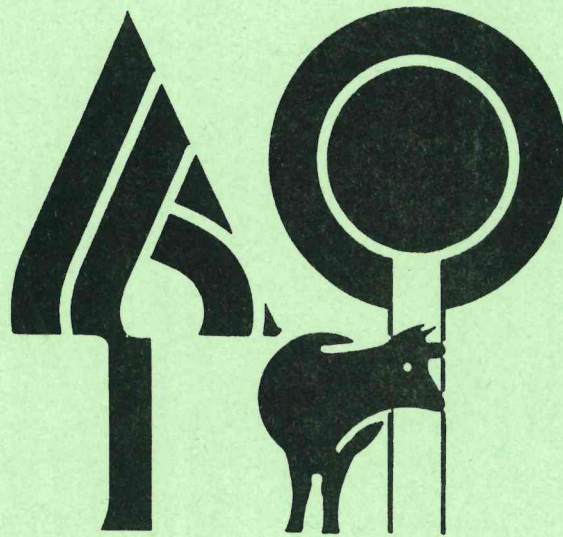
DEPARTMENT OF PARKS AND WILDLIFE

# Agroforestry Update



Newsletter for Agroforestry

Researchers and Practitioners



Department of Conservation and Land Management

Department of Agriculture

C.S.I.R.O

Western Australia

ISSN 1030 - 7982

7



STUDY TOUR OF DRY COUNTRY AGROFORESTRY IN INNER MONGOLIA -  
SEPTEMBER 1987

Richard Moore  
Department of Conservation and Land Management  
Western Australia

We had travelled west, about 1,000 km by train, from Beijing to Inner Mongolia. As we neared the town of Deng Kou, the main location on our study tour of dry country agroforestry in China, the landscape was flat and mostly desolate. How could they possibly turn this barren windswept desert of sand into a green and productive environment? Apparently they are, and that is what we had come to see.

Our party consisted of Robyn Russell, a forester now living in Malaysia, Peter Rutherford, plantation manager with APM in Albury, John Fenwick, doctor and farmer from Esperance and myself, an agroforestry researcher with the Department of Conservation and Land Management in Busselton, Western Australia. We were accompanied by Zhuo Shi Wei, a senior researcher of shelterbelts, who was our tour guide, and Zhang, a young forestry graduate, who was our interpreter. Both were from the Chinese Academy of Forestry in Beijing.

Our visit to Inner Mongolia was part of an Australia/China exchange programme co-ordinated by the International Tree Crops Institute. Nine Australians and one American were taking part - the other six were travelling south from Beijing to study flood-plain agroforestry in Anhui and Shandong provinces.

Once in Deng Kou, we were looked after by members of the Chinese Academy of Forestry's Research Station. The Research Station was established in 1978 after the Chinese Communist Party had embarked on a massive revegetation project known as "The Norths" (referring to the North West, the North and the North-East of China). The project, also called the Great Green Wall of China, aims, in a number of stages, to stabilize and make productive some 1,400 square kilometres of desert. Even though much of the area receives less than 200 mm of rain per year, it was well covered in shrubs and even some trees at one time. Erosion by wind and water causes huge losses in agriculture and much human suffering. It has been estimated that each year 1.6 billion tonnes of silt is carried down the Hwang Ho, much of it coming from the middle reaches of the river in the region of Deng Kou.

At Deng Kou, there are two distinct types of desert land; that which can be irrigated and that which cannot. The first and most important task on the non-irrigatable land is to stabilize the sand dunes.

In the depressions between the dunes is a silty material. It has been found that if this silt is laid out on the dunes in small ridges on a 1.5 metre grid, the sand is held firmly enough to allow seeds to germinate and seedlings to grow. About 6,000 hectares of desert land, under the control of the Research Station, have been stabilized in this way. The species used are mostly indigenous shrubs which can be used for fuel and fodder.

An entirely different revegetation method has been developed for land which can be irrigated. Here the aim is to grow agricultural crops, but to be able to do this, there needs to be protection from the strong winds and driving sand. A shelterbelt system, called a forest net, is used.

Trees are planted once the earthmoving work, such as canal digging and dune leveling, has been done. The main tree is poplar, which also provides timber. The usual spacing of the forest net is a grid 430 m x 130 m and it is orientated to provide protection from the strongest winds.

Within 5 years the belts of trees provide enough shelter for agricultural crops to be grown. We saw recently built villages to house the people who work the land which has now been made productive. At breaks during the inspection of these areas, we enjoyed fresh watermelon, rockmelon and grapes grown on land that, only a few years earlier, had been desert.

Throughout our journey, we were looked after with warmth and hospitality. A typical example was the stop at a small Mongolian town during a 12 hour drive across the desert. We were invited to sit at a table filled with a feast of local dishes surrounded by the friendly smiling faces of the chief of the district and his family.

I was also impressed by the way the Chinese tackle land management problems. I felt their approach was considered, practical and vigorous.

During the visit, we made contact with people who are working on basically the same problems as we are in parts of Australia - problems of shifting sand and strong winds. This contact, I believe, leads to mutual benefits through exchange of ideas and information. Even though details of techniques and species are perhaps not directly applicable, the principles certainly are. For example, the benefits of shelterbelts to agriculture in harsh environments are clearly demonstrated in China.

#### **TIMBER INDUSTRY STRATEGY (TIS) FUNDING FOR AGROFORESTRY**

This financial year \$100,000 has been allocated from TIS funds toward agroforestry. Primarily, funding is for the establishment of a series of commercial agroforestry demonstrations throughout Victoria. In addition the Department has employed Brenda Gruer, a graduate of Ballarat CAE to assist in the measurement, maintenance and data analysis of the agroforestry research trials.

#### **\$55,000 GRANT FOR STUDY OF ECONOMIC RETURNS FROM TREES ON FARMS**

The Department of Conservation, Forests and Lands together with the Department of Agriculture and Rural Affairs has been successful in obtaining a grant of \$55,000 from the Australian Special Rural Research Fund to evaluate, in economic terms, the private and social costs and benefits of trees on farms in Victoria.

Bill Loane, a resource economist with experience with the IAC and CSIRO Division of Forest Research, has agreed to an initial secondment of one year to undertake the study, commencing in early 1988. Bill's primary objectives will be to estimate the private and social rate of return from tree planting, regeneration and clearing on farms using economic cost-benefit studies. The results should quantify financial returns to farmers and provide encouragement for further tree plantings. The social benefits will indicate to governments whether and where greater financial inducements for tree planting are warranted. Additionally, this project will form an integral part of the Victorian Government's agroforestry and land protection programmes.

Bill will likely be based with DARA at Burnley and his programme will be co-ordinated by the Joint Management Group for the Agroforestry Research

programme under the chairmanship of Dr Wally White (DARA). Other members of this committee include Stuart Margetts (DARA) and DCFL representatives, Dr David Flinn and John Kellas.