SUSTAINING OUR GRASSLANDS WITH TREES - PLANTED FOR PROFIT

Francis Clarke, 'Pinecbank', Tarago

Agroforestry systems are not new to Australiia In fact man's management of trees and grass in the Australian environment could go back anywhere from 40,000 to 100,000 years. The very soils we now farm were formed under this management regime. It is only in recent times, about 200 years, that land managers have decided to dispense with the trees and it is only now that we are realising how disastrous this change can be. Erosion by wind and water are obvious consequences of tree removal but more subtle changes are also taking place. Salting and acidity are now recognised as greater threats than erosion itself to the sustained use of our farm and grazing land.

What can be done to alleviate our present problems? An obvious solution is to replant the trees, but which trees, where, hoow are we to manage them and who is going to pay?

There are many possible solutions to these problems; some appear more promising than others:

NATURAL REGENERATION

Regeneration has its place in most farm plans but if practised extensively on any farm could mean a return to hunter gathering, a prospect that would not appeal to those who make their living from the land.

In may situations the 'local native' species are now quite poorly adapted to survive in the new environment created by our intensive farming practices - raised fertility, lower pH, raised levels of available aluminium (a potent root toxin), increased soil compaction, increased competition from exotic grasses and weeds and the presence of cloven hooved animals at high stocking rates, to list just a few.

The greenhouse effect is also likely to compound these problems for the 'local natives' but could prove beneficial to well adapted exotic tree species.

DIRECT SEEDING

Direct seeding is a promising method of establishing trees without greatly interfering with our farming practices. Indirect economic benefits are likely in the form of improved micro climate, improved habitat for ecologically desirable species, in erosion control and in the lowering of saline water tables. Offsetting these gains are the high costs of fencing, weed control and very variable results - at least with our current state of knowledge.

AGROFORESTRY

Agroforests of varying types and designs, while arguably the highest cost option, also hold the promise of providing a direct financial return from the trees themselves while at the same time giving us all the other benefits that trees confer. A futher advantage not generally considered in the other options is how are we to afford to replace the trees when they become old and ineffective. Many of our current "unmanaged crops" of windbreak trees and free standing eucalypts are going to be very expensive to dispose of when they have outlived their usefulness.

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The chainsaw and bulldozer are an essential element if tree planting programs are to be "sustained" in the long term.

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SOME PROMISING AGROFORESTRY OPTIONS

Wide spaced, high pruned radiata pine has clear market potential. Management techniques are well understood and if one ignores the nonsense put forward by those philosophically and emotionally opposed to this successful exotic species the chances of an acceptable return on investment are high.

Timberbelts or managed windbreaks where a single row of radiata pine is planted and high pruned, possibly in conjunction with a slower growing species, have proved highly profitable.

Combining timberbelts with agroforest plantings can provide an ideal lambing haven with little if any loss of grazing potential.

Energy cropping of wattle or coppicing eucalypts can be a very profitable way of managing both windbreaks and regeneration areas.

The market for high value hardwoods is wide open but little is yet known of how to manage these species on the farm. Marketing of small lots may prove difficult unless one is prepared to invest in on-farm processing.

Non-commercial thinning and pruning of regeneration or direct sown trees can provide quality timber for future on-farm use.

The successful management of fodder tree species is proving elusive but has inherant appeal - more research, combined with trial and error is required.

Novel planting programs to produce tree seed for sale world wide, essential oils or honey have exciting potential but will require a degree of specialisation.

THE GUIDING PRINCIPALS

Grow Quality!

- With radiata this will require a very high standard of site preparation and weed control - learn the techniques and plan well in advance.

- Plant only the best genetic material available. Purchase of well conditioned cuttings, preferably from tested clones will permit one to plant far fewer trees to obtain a successful final crop. Experience at "Pinebank" would indicate the following culling ratios are required in order to ensure an acceptable crop.

Any old seedlings	-	plant 10 to harvest 1
Best seed orchard seedlings	-	plant 5 to harvest 1
Field select cuttings	-	plant 3 to harvest 1
Cuttings from tested clones	-	plant 2 to harvest 1

- Careful management of livestock for the first 4 to 5 years is essential to avoid excessive browsing, bark stripping or rubbing.

- Learn how to perform variable lift pruning and form correction. Be sure that labour will be available for on-time thinning and pruning. This will set the area that can be established over any 8 to 10 year period.

- Become familiar with timber markets and have a clear plan of where and how you plan to sell the tree crop.

- Join the Australian Forest Development Institute (Australia's private tree growers' association) which holds field days, publishes "Australian Forest Grower" magazine to keep you up-to-date with tree growing techniques and will put you in touch with markets and other farm foresters.

Less is known of management techniques for other species in agroforestry plantings but a wealth of practical experience is available by joining together as is now being encouraged by the formation of land care groups.

FUTURE DEVELOPMENTS

Tree planting and management at "Pinebank" over the past 17 years has now reached the stage where we are developing, in conjunction with Australian National University, an intensive short course of applied agroforestry. This course will first be offered to departmental extension officers with the aim of "training the trainers" but later we anticipate it will be available to farmers who wish to learn and try the latest techniques.

There is no doubt that the community is becoming aware of the need to put trees back into our rural environment. While politicians will doubtless continue to indulge in political pork barrelling, such as "a billion trees in 10 years", it will be we farmers who eill have to meet the major costs of any planting program. It would indeed be a pity if all the effort and goodwill now in evidence were to be misdirected into growing trees with little or no commercial potential. We must make sure that the trees planted today will provide a source of income and profit to the next generation so that our children may continue the good work. So get out your planting spades now!

REFERENCES AND FURTHER READING

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