

1. Summary

Title: PRELIMINARY STUDY ON THE VIABILITY OF USING AZOLLA IN SRI LANKA.

Research Institute: University of Colombo.

Chief Scientific Investigator: Dr. W K Hirimburegama

Period of Contract: 31 January 1993 - 28 February 1995.

(Grant was awarded on 28-01-93).

Scientific Background and Scope of Project:

Azolla technology is an organic, biological, non-polluting and natural fertilizer method used for the rice culture in some Asian countries. Some research and extension work has been done in small scale from mid 1970's on the use of this biotechnology in Sri Lanka. The main scope of this investigation was to find out the current situation on the occurrence and any use of Azolla in Sri Lanka, especially in rice culture. Also, it was expected to highlight reasons for not using this technology in this country, and some recommendations for the immediate future.

Experimental Method:

Literature survey, Field visits and observations, Communication with people involved with Azolla research/ or use in Sri Lanka and other countries, Interviews with scientists, extension workers, farmers and villagers in relevant locations in Sri Lanka.

Results Obtained:

A review report which was submitted on the present situation on the Azolla use in rice cultivation in Sri Lanka.

Conclusions: (following was mainly extracted from the above report)

According to the observations and studies done so far following conclusions could be made. To make firm conclusions, it is essential to visit Kalutara-Bombuwela and Pelmadulla locations where Azolla technology is being introduced by Mr Wijesundara at the Bombuwela Agricultural Research Station of the Department

of Agriculture on the adaptive research and extension basis, and to discuss with some of the persons involved in this extension work. Another location required to be visited is at Kegalle where some rice growers use Azolla technology to replace some of the nitrogen fertilizer requirements for rice. Current status on the use of Azolla technology with its viability for the use in some regions is given below with relevant recommendations.

- 1) Azolla technology as a biofertilizer is not being currently used in Sri Lanka except one or two farmers in Kalutara and Ratnapura districts, mainly due to following reasons:
 - 1.1) Rice growers/ farmers are not aware of this technology, although Azolla naturally occurs in the rice fields at Mandaramnuwara and other areas of Nuwara Eliya district.
 - 1.2) Azolla technology is a new concept to the rice grower, and they are required to be convinced and trained. This has not been done except in some areas of Kalutara and Ratnapura districts, where extension work on Azolla is still on adaptive research stage.
 - 1.3) Government policy makers are required to be convinced on the use of biofertilizers, and also the fact that it is not possible to replace chemical fertilizers 100% with biological and organic methods to maintain the present yield levels. Also, it is necessary to understand that organic matter as green manure or in any other form is essential to improve the quality of the cultivated soils.
 - 1.4) Unless the grower/ farmer gets some extra income or saves some of the present expenses required for cultivation, it would not be realistic to expect them to adopt a new fertilizer practice.

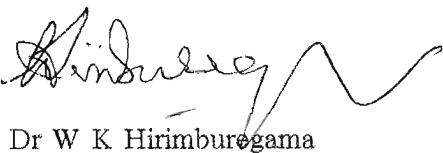
- 2) Azolla technology has a greater potential to be used as a biofertilizer in terraced rice fields of Nuwara-Eliya district, and in the low country wet zone areas of Kalutara and Ratnapura Districts. Farmers are required to be convinced and trained, and a government sponsored programme should be launched immediately to utilise this environment friendly biofertilizer technology in relevant areas.

- 3) Further research are required to be done in Sri Lanka in the field of Azolla use and other biofertilizers as well. If an integrated Azolla-organic fertilizer programme for rice farmers in relevant areas is launched, further investigations on Azolla insect pests are required to be done.

- 4) It is urgent that government now start a well planned integrated bio and chemical fertilizer soil improvement programme, which would help the cultivator/ farmer to improve the quality of their life. State needs to invest on such programmes, as many benefits are long term and not directly available to the farmer. **As a subsidy is intended for chemical fertilizers, a similar assistance should be given for farmers those who use biofertilizers, green manure, and compost like organic matter.**
- 5) It was noted that the extension service of the Department of Agriculture is not functioning presently, and it is essential to establish an effective agricultural extension service for the success of suggested soil quality improvement programme.
- 6) It is understood that the government of Sri Lanka is prepared to spend Rs 1700 million per year only on the fertilizer subsidy scheme with effect from 04 April 1995. Compared to this amount of money, the attention on programmes and research on alternative natural and biological fertilizers is negligible. However, recently there is a slight improvement in the attention paid by the relevant authorities on the natural fertilizers. Azolla technology is one of the methods to save a fraction of this expenses, while improving the soil quality which is a very important factor.

Papers Published on Work Done under the Contract:

It is expected to submit the review paper in a required format for publication in a local journal.



Dr W K Hirimburegama

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15 April 1995.