

CONSTRAINTS ANALYSIS OF THE RICE AND GRAIN INDUSTRY IN PAPUA NEW GUINEA.

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ABSTRACT

Constraints analysis of the rice and grain industry was done to give a better view of the problems facing the rice and grain industry in Papua New Guinea. The results of this study discussed below, were used in the testing of a pilot rice program in the Markham Valley and subsequently used in the writing of the current approved National Rice Policy for PNG. The analysis gave a better insight and understanding of the rice and grain industry than before. It is expected that the understanding and utilization of the information in the document together with the salient point of the approved National Rice Policy would go a long way to enhance the rice industry in PNG.

Keywords: Constraints analysis, problem analysis, objectives analysis, problem tree, causes and effects, means and end.

INTRODUCTION

Rice was introduced in Papua New Guinea [PNG] by the German Missionaries over 100 years ago [Sloane Cook *et al* 1993]. But rice production has remained subsistence all these years. However, results of a 24 hours food recall studies in PNG revealed that almost 90 percent of the urban population ate rice the previous day, and one-quarter of the rural population also ate rice the day before the survey [Gibson, J and Rozelle, S. 1998]. Rice has thus become the second staple food, after sweet potato. Currently, PNG imports over K150 Million worth of rice to feed its population.

Since the late 1980's, the Government of PNG set up a Grain and Rice Public Investment Project to oversee grain and rice development. In order to gain a better understanding of the rice and grain industry in PNG, a two day Constraints / goal oriented program planning workshop was conducted at the Forestry Research Institute, Lae in August 1994. Twenty nine participants, made up of university lecturers / professors, rice and grain national and provincial scientific, technical and extension staff from Lae, Unitech and Port Moresby assessed and analyzed on the rice and grain industry in PNG. The results were circulated widely to Rice and Grain Program Managers and staff then. But since most of the constraints still remain today, this report is being published for wider circulation for the benefit of

current and future managers, policy makers and participants in rice and grain industry promotion and development in PNG and elsewhere.

MATERIAL AND METHODS

An overview introduction to constraints analysis was done by the moderators. Cards of different colors cut into approximately 8cm by 12cm, and marker pens of different colors were supplied to all participants. Following the methodology of constraints / problem analysis [IRRI 1991, GTZ 1990], candidates were asked to write as many constraints or problems that they know to affect the rice and grain industry in PNG. Only one problem was to be stated per card and each was written boldly for easy reading by all. Participants were encouraged to write as many cards as they wished. All written cards were fixed on the wall and jointly scanned, approved and modified where necessary, and duplications removed. All the approved cards were clustered and clarified into appropriate groups and ranked. Thus causes of the problems were identified and the interrelations among the problems analyzed. In building the problem tree, the means and ends relationships between the individual cards were established. This was followed by solutions identified for evaluation.

The problems were stated in the negative and the corresponding solutions in the positive.

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Figure 1. PROBLEM ANALYSIS

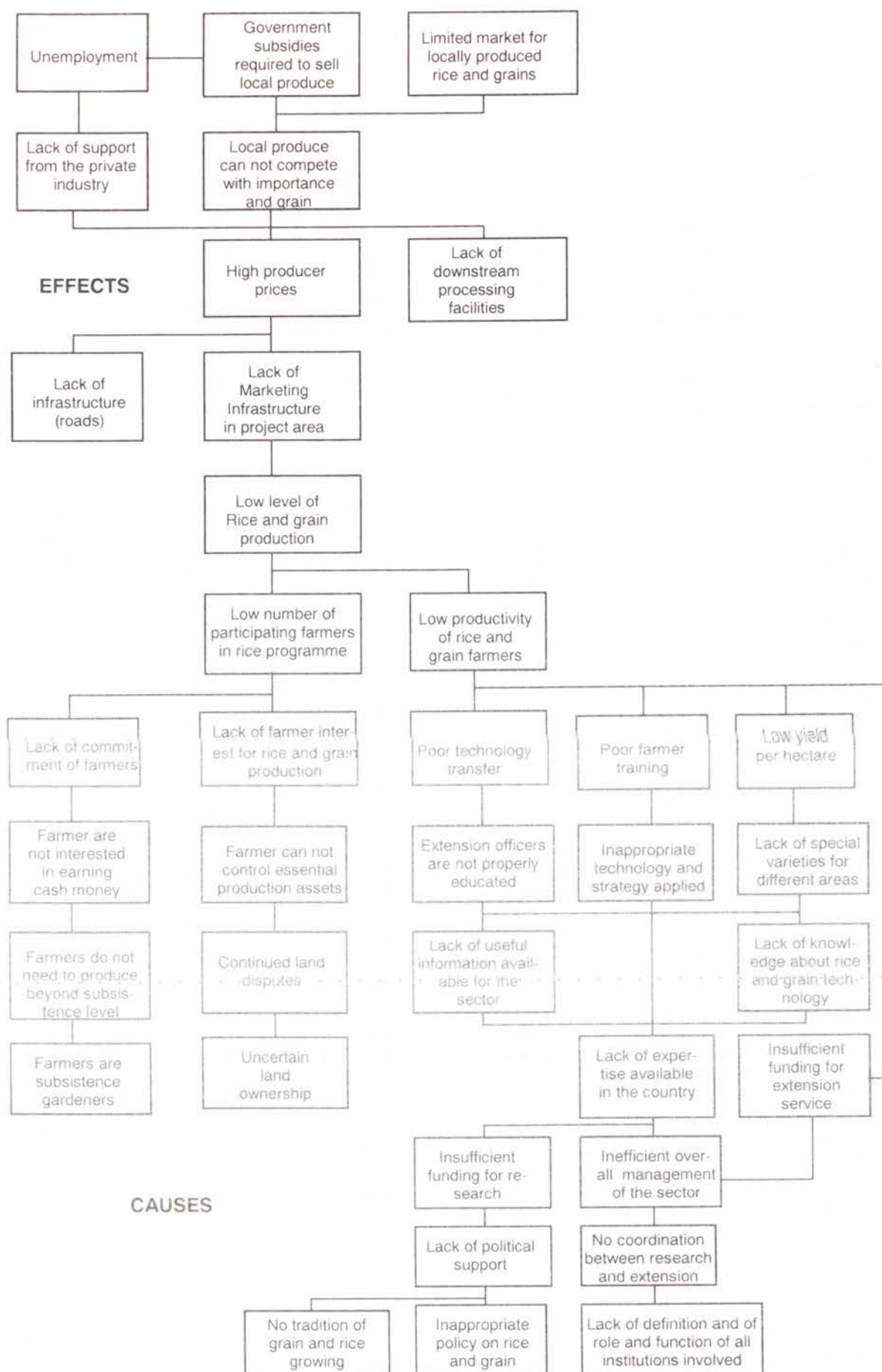
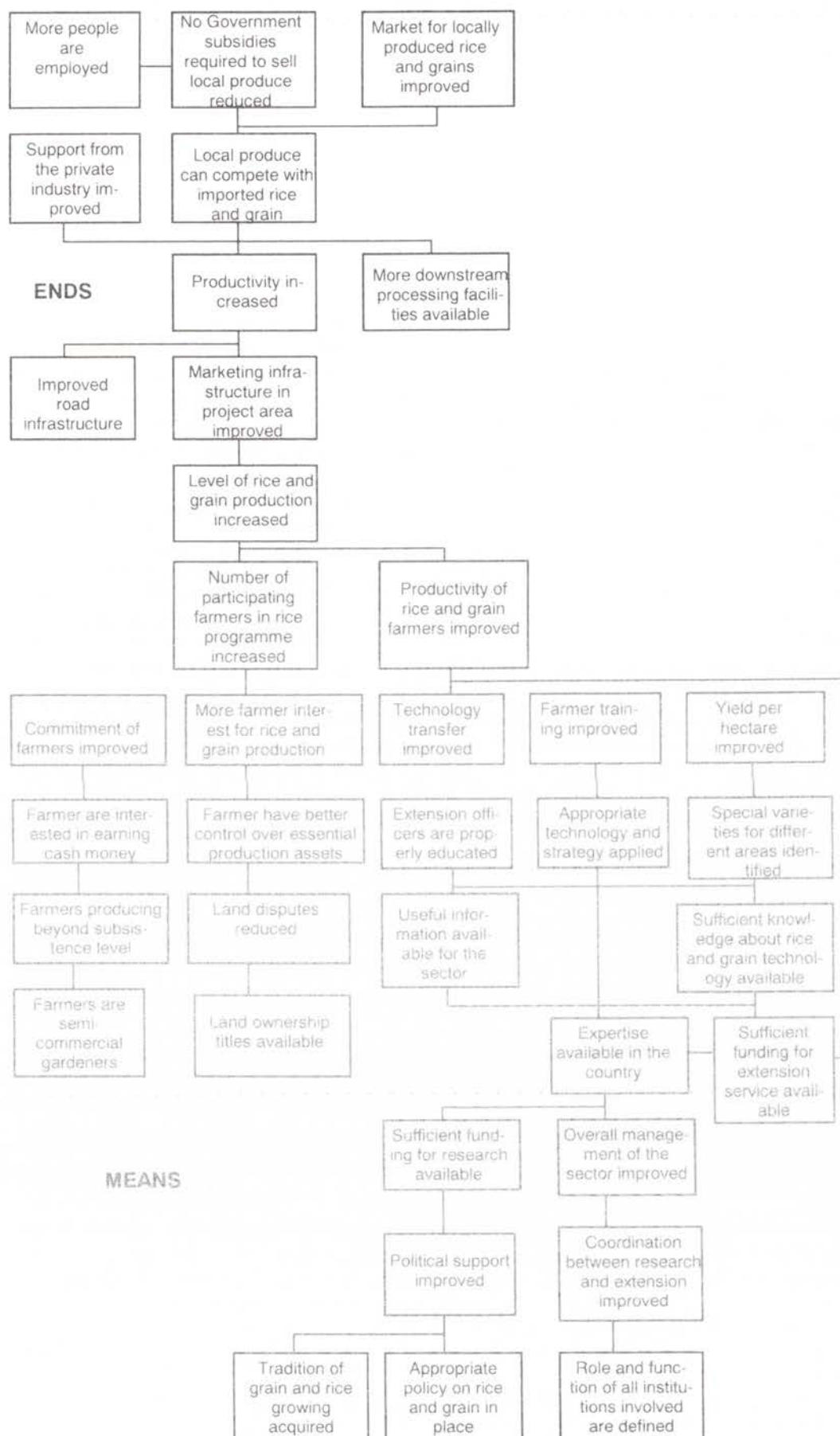


Figure 2. OBJECTIVES ANALYSIS



RESULTS

The results of the analysis are presented below [figs 1 and 2]. They indicate that there are many constraints that affect the grain and rice industry, and that by addressing the constraints, positive results would be achieved.

1. The Constraints / Problems.

The intermediate causes of failures in the grain and rice industry [fig.1] are due to;

(a). **Low productivity of rice and grain farmers, and [b] Low number of participating farmers in rice and grain programs.**

(a). **Low productivity** of rice and grain farmers results from **poor technology transfer, poor farmer training, low yields per hectare and insufficient funding for extension services.** These in turn are caused by various factors as discussed below;

(i) **Poor technology transfer** results from extension officers not properly educated as a result of lack of useful information for the sector due to lack of expertise available in the country.

(ii). **Poor farmer training** results from inappropriate technology and strategy applied, as a result of lack of expertise in the country, insufficient overall management of the sector, no coordination between research and extension and lack of role and function of all the institutes involved in the industry, insufficient funding for research as a result of lack of political support as influenced by inappropriate policy on rice and grain and no tradition of grain and rice growing.

(iii). **Low yields per hectare** in turn are caused by lack of special varieties for different areas, lack of knowledge about rice and grain technology, also lack of expertise in the country, insufficient funding for research as a result of lack of political support due to inappropriate policy on rice and grain and no tradition of rice and grain growing

(iv). **Insufficient funding for extension services** results from inefficient overall management of the sector, as a result of poor coordination between research and extension which in turn results from lack of role and function of all the institutions involved in the rice and grain industry.

(b). **Low number of participating farmers in rice and grain programs** is caused by **lack of commitment of farmers and lack of farmer interest for grain and rice production**, both of

which are influenced by other factors as follows

(i). **Lack of commitment by farmers** results from farmers not interested in earning cash income because farmers do not need to produce beyond subsistence level because they are subsistence gardeners.

(ii). **Lack of farmer interest for rice and grain production** results from farmers not able to control essential production assets due to continued land disputes that result from uncertain land ownerships

(c). The problems of [a] **low number of participating farmers in rice program** and [b] **low productivity of rice and grain farmers** discussed above, results into **low level of rice and grain production**, which together with **lack of road and marketing infrastructure** in project areas give rise to **high producer prices**. The high production prices coupled with **lack of downstream processing facilities** results in the **local rice and grain produce not being able to compete with the imported rice and grain** and also **lack of support from the private industry**. The ultimate results of these are **limited market for locally produced rice and grains, unemployment and the need for Government subsidy to promote and sell local rice.**

2. By turning all the negatives in Fig 1 to positives in Fig 2 that is by addressing the problems, the end results would be **productivity increase** coupled with **availability of downstream processing facilities**, the **local produce can now compete with imported rice and grain**, **stimulate private sector support** and gives rise to **reduced unemployment, more market for locally produced rice and grain**, and **no need for government subsidies to produce and sell locally produced rice and grain.**

DISCUSSION

Composition of the team from university, research, development and extension was based on subject matter competence, and thus drew on the knowledge, ideas and experience of the team members and from interdisciplinary points of view. The analysis gave a better understanding of the Rice and Grain Industry in PNG.

The above analysis was used in the design and implementation of a pilot phase rice program in the Markham Valley in 1998 and 1999 [also reported in this issue]. The constraints analysis report and the results of the pilot phase rice study were used in the formulation of the 1999 ap-

proved National Rice Policy Document.

The Government of PNG in approving the National Rice Policy pledged to support the rice industry for 10 years at a value of K4.0 Million each year, based on the following salient points addressed in the National Rice policy document;

- Increased research and technology development, by recruiting and training of scientists.
- Promotion of seed production and multiplication to support quality and farmer seed needs
- Called for strong extension component, by recruitment of additional staff also training them to deliver effectively.
- Called for the voluntary mobilization of masses of farmers and therefore also their lands [one ha or less/ farmer] instead of forced mobilization and large acreages that may result in land disputes.
- Called for rice production and promotion as a component of the existing farming systems in the areas.
- Called for the training of farmers to support themselves and the industry
- Backed up the idea of provision of machinery and equipment support at affordable and economical prices in production areas
- Called for small scale irrigation development in favourable sites, to support crop growth and also to extend the cropping season and increase the number of crops per year.
- Supported the need for promotion of downstream processing and packaging in production areas
- Called for a revolving funding and credit scheme to support needy farmers
- Called for the formation of farmer groups for collective decision making implementation and ease of technology transfer, production, processing and marketing, and.
- Called for bilateral collaboration with other partners/countries in developing the Rice and Grain Industry in PNG

Most of the above issues came out clearly, as a result of the constraints analysis done. And it is expected that, by following the issues raised in the constraints analysis as well as in the Approved Rice Policy document, the current Rice and Grain Industry would make better impact. It is recommended that a subsequent follow-up analysis be done after some years, so as to update on this as well as eliminate constraints that would have been solved as well as identify new emerging ones.

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