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A Critical Study of Green Revolution in India-An Assessment

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ABSTRACT

A group of students from the Peace and Development master program at Linnaeus University in Växjö have conducted a field study on agriculture in Ribaue district, Nampula, Mozambique. This study took place over a period of five weeks starting from the beginning of April. The purpose of the research was to perform a socio-economic study to gain a better understanding of the conditions under which the population of Ribaue live, the majority of which are small-scale farmers. Also, how they manage to access resources in order to improve their livelihoods and how small-scale farmers are striving to reach a lifestyle that is more sustainable. This study concentrates on the potential introduction of the Green Revolution Strategy, which is linked to food security and combating poverty, in Mozambique. It asks the question: under what conditions can it be possible for a Green Revolution Strategy to be developed and implemented in the district of Ribaue in Nampula, and which are the necessary prerequisites for a successful implementation of such a strategy? We have, through interviews, observations and participation in various activities, discovered the main issues that need to be addressed in the district. The Green Revolution Strategy exists in theory on the national level but has not yet been fully implemented in practice. Very few producers in Ribaue have heard of the concept 'Green Revolution', however, certain parts of its content were known to farmers, such as improved seeds and fertilizers. Furthermore, the gender conditions are still in favor of men, although some significant progress has been made. Better access to education and credit, improved infrastructure, and more effective spread of information and communication are some of the prerequisites that need to be addressed in Ribaue and they are presented in this study. Keywords: agriculture, small-scale farmers, Green Revolution, prerequisites, Ribaue, Mozambique.

INTRODUCTION

The world 'revolution 'implies two things: first fact fast change in some phenomenon, the change is so fast that it is well marked and, second the impact of the change is felt over a fairly long period of time and it brings about certain fundamental change.

When we add the prefix 'green' (the colour is symbolic of agricultural crops) to the world 'revolution' and coin the phrase 'green revolution' it implies [tyagi, B.P (1994)](i) a well marked improvement in agriculture production in the short period, and (ii)the sustenance of higher level of agriculture production over a fairly long period of time.

Green Revolution' has been identification with technological breakthrough seed fertilizer irrigation mechanization in an Indian agriculture since HYVs (High yielding varieties) have been introduced along with chemical fertilizers, pesticides, adequate irrigation and machines, the package could also be termed as biological mechanical revolution. The new agriculter strategy was introduced in India during third five tesr plan i.e during sixties(bilgrami , S.A.R., 1996,P.188).

Origin of green revolution

'Green revolution 'which is the 'new agriculter strategy (NAS) is composed of draft high yielding verities (HYV) Fertilizers pesticides and new and efficient water management techniques etc. (Rao Rao and new and efficient water management techniques etc. (Rao Hanumantha, 1975, p.3). These are the result of scientific developmet. This scientific development was made possible by Norman E. Borlang of Rockefeller foundation and many other agricultural scientists. The Green Revolution' was originated in 1944 in Mexico by Rockefeller.

This study examines conditions that are in favor of or hinder the possible implementation of a Green Revolution in Mozambique by using the district of Ribaue, in the Nampula province, as an illustration. Based on present Mozambican strategies and plans; that is, the Green Revolution Strategy, the Strategic Plan for Agricultural Development (PEDSA) and the Provincial Strategic Plan (PEP), this research paper identifies seven key prerequisites that have to be present for the possible implementation of the Green Revolution in Ribaue. These prerequisites are namely improved health conditions, access to education, improved gender conditions, access to credit, access to enhanced technology and agricultural inputs, developed information and communication and improved infrastructure. A matrix is used to further discuss the Green Revolution within the framework of two farming systems, organic and conventional farming, in order to identify which type of farming is more feasible in Ribaue district.

Background of the Green Revolution :

The concept 'Green Revolution' was a term used for the first time in 1968 by the then director of USAID, William Gaud, to define the transformation and development of agriculture in many developing countries in Latin America and Asia that resulted in a surplus in production and productivity between 1940 and 1960. The Green Revolution was an initiative launched by American researchers, working for the Rockefeller Foundation, such as Norman Borlaug who has been called 'the father of the Green Revolution' due to his achievements in agricultural research and development. The researchers developed a program of improved seed varieties with high productivity, fertilizers, new farming techniques and new plant breeding financed by the Rockefeller Foundation. It was initiated for the first time in Mexico in 1960. The country was suffering from a food crisis and widespread hunger at the time. The Green Revolution was an initiative taken by the Mexican Government in order to reach food security and increase food productivity by increasing yields of both wheat and maize. According to the Green Revolution Strategy assembled by the Mozambican Ministry of Agriculture, the Green Revolution in Mexico proved to be a real success and spread therefore to other Latin American countries. The food stuff production was argued to be so efficient that Mexico reached self-

sufficiency in the 1960s and had the possibility to export the surplus of wheat and maize (Green Revolution Strategy 2007:2).

Focus and Objectives

The objectives that are presented in the strategy want (1) to distribute technologies, (2) to improve farmers‘ access to technologies and knowledge which will increase agricultural productivity in an environmentally sustainable way, (3) to empower farmers; women in particular, (4) to increase income, (5) to improve food security and reduce poverty, (6) to engage partners (governments, organizations), (7) to address agricultural productivity and (8) to mobilize national and international resources in order to support an African Green Revolution (Strategy for an African Green Revolution 2009:6)

Lastly, the policy and partnership program encourages national governments and donors to establish an enabling environment in order to trigger an African Green Revolution.” This involves strengthening national policy institutions (seeds, fertilizer and market policies) as well as developing policies that will facilitate technological and institutional changes required to achieve an African Green Revolution (Strategy for an African Green Revolution 2009:3-5).

This study considers an organic Green Revolution to be a possible way out of poverty in Ribaue, due to the rich agricultural assets that Ribaue district possesses. Very few Mozambican farmers use chemicals and their production is therefore organic. Since the demand for organically produced foods has increased makes it more viable for Mozambique to invest in an organic Green Revolution. Additionally, it is necessary to achieve food security and increase food production and productivity, and to improve the living conditions of the poor. Since female producers have a key role in the food and nutritional security in the households, it is essential to incorporate female 90 farmers and boost their role as producers, which can be done through the implementation of an organic Green Revolution. The Mozambican government should, however, be cautious in its implementation of the Green Revolution and should take into consideration and weigh its long-term effects and risks against its short-term benefits.

Thus, green revolution has many favourable and adverse impacts. In the words of Dr. V.K.R.V. Rao, "It is now well-know that the so called green revolution which helped the country to raise its output of food-grains has also been accompanied by a widening of the range of inequality in rural incomes, the loss of their status as tenants by a number of small farmers and the emergence of social-economic tensions in the countryside..."

The challenge which Indian agriculture faces is not only of production but also that of distribution, and in our anxiety to concentrate on production problems, we should not forget the human and social implications of agricultural development. On adverse impact of green revolution on employment Uma Srivastava, Robert W. Crown and East O. Heady have rightly stated, "Since mechanization may dampen the increase in labour demand, resulting from the expanding factor of seed fertilizers, the policies that encourage premature mechanization in surplus labour economics, such as India's, do not seen conductive to solve the problem of growing unemployment." C.H. Nanumantha Rao has also brought out the favourable as well as unfavourable

effect of new technology on employment: "If the green revolution is regarded as a package consisting of HYV and fertilizers its contribution to employment has been substantial.

CONCLUSION

However, green revolution is embodied in the seed-fertilizer irrigation package requires some drastic improvements. This revolution is limited to wheat, maize and bajara only. Progress in major commercial crops, viz. oilseeds, cotton and jute is very slow. In addition to all this, pulses which account for about 10 percent of the total food production have not registered any increase in production. It would, therefore, be very premature to speak in terms of an agricultural revolution unless the projected upward trend in production in a new crops.

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