

National policy for agricultural research

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The Ministry of Agriculture and Livestock has formulated the National Agricultural Policy 2002-2010 to mobilize the state and private sector investments and to transform the domestic agriculture and livestock industry to meet the food needs of the expanding population. The broad policy goals are to bring prosperity to the farming community through enhanced incomes, sustainable food security and increased exportable commodities to earn foreign exchange. This policy identifies agricultural research as a main pillar to achieve its goals. It emphasises on the need for commercial and demand oriented cutting edge research and human resources development to conduct such research, supported by a stable funding mechanism.

The Council for Agricultural Research Policy has formulated the national agricultural research policy to support the goals and strategies proposed in the national agricultural policy of the Ministry of Agriculture and Livestock. This policy, while addressing the production issues, of the traditional agricultural sector has made high emphasis on the role of the non-state/private sector in agricultural development.

Agricultural research has made substantial contributions to the overall productivity growth of the agriculture in Sri Lanka. Most significant is the impact with the development of high yielding rice varieties, which covers over 90% of the sown area at present reflecting the high investment made on rice research.

Although no spectacular breakthroughs have been made in the other areas, agricultural research will have to play a dominant role in the future due to the increasing population, scarcity of land and water and to be competitive under the prevailing open economic policies and trade liberalization. Agricultural research has to respond to the new challenges by generating new technologies to increase the productivity of the agricultural sector.

The national agricultural research system which consists of 12 institutions/departments has not performed well due to several constraints, mainly funding in the recent years.

It has also lost its momentum, due to inadequate of priority setting mechanisms and inefficient institutional management. This situation has to be corrected and the productivity of the research system has to be improved

through various institutional innovations for which forward looking research policies will be required. The research policies should be able to fill the gaps in R&D that constraint agricultural production.

As stated earlier funding has been the main constraint, which has been temporarily overcome.

However, research intensity (R&D), investment as proportion of the agricultural GDP has been low compared with the developed countries (5%). The annual recurrent research expenditure in 2000 was Rs. 905 million with a research intensity of only 0.52.

Therefore, to revitalize the research system research intensity should be increased to at least 1%. The new agricultural research policy should make a difference to the commercial agriculturists and to the farming community to improve their livelihoods for which quantum jumps in innovative discoveries is a must. The main national agricultural research policy statements include the following:

Priority setting and strategic planning

The need to identify the priority thrusts areas of research is essential to achieve the best of the investment. In setting priorities national requirements such as contribution to economic development, food security, export earnings, foreign exchange savings, poverty reduction, employment generation and natural resources conservation has to be considered.

The main emphasis should be on the research areas of current importance such as crop and livestock improvement using modern biotechnology, hybrid seed production, resource improvement research, food technology, post harvest processing and value addition, labour and energy saving measures, water conservation and waste utilization. The national research system has to prioritise their research portfolios in consultation with the stakeholders in order that the research will be useful to the end users.

The research portfolios should match the potential and limits of the eco regions in which the crops are to grown or in other words there should be an eco regional approach in prioritising research. It is also important to realize the value of indigenous knowledge and synthesis it with modern scientific advancements for the development of sustainable agricultural systems.

Human resources development and management

The efficiency of the research system will depend on the quality and skilfulness of its human resources. The research system will have to focus on the development of staff in selected fields based on changing trends of agriculture, particularly the commercialisation of agriculture amidst the inadequacies of labour. Therefore, there should be planned staff development programmes for each institute as replacement and for developing competencies in the up coming fields. The staff development plans should commence with the initial recruitment. It is very essential to recruit well-qualified scientists for research positions, preferably with a postgraduate degree. Then they could be trained further in the specific field either in local or foreign universities depending on the needs. Further training opportunities should be based on need and merit rather than as entitlements. Once recruited, the young scientists should work under an experienced staff to gain direction and experience. In some countries such as India the new recruits are given basic training in agricultural research management to get them into the main stream research, hence there should be an agricultural research management unit centrally established to train the scientists. Once recruited and trained it is necessary to retain the scientists by effectively mobilizing them giving due consideration to their fields of specialization. Most of the scientists in the state sector become frustrated and discouraged due to lack of avenues for promotion to high positions. Since there are very few high positions in many research institutions appropriate schemes should be developed for promotions based on merit. Merit promotional schemes are commonly used in the universities to motivate staff and to retain their services.

Improving the efficiency of NARS

It is necessary to improve the effectiveness and efficiency of the national agricultural research system. This is of paramount importance as some of the institutes are well-developed having a cadre of qualified staff and facilities. Some of the regional research centres are poorly staffed and equipped. Those institutes that have demonstrated quality, credibility and productivity in research should be further

strengthened as centres of excellence. Many of the developing countries have established centres of excellence for priority fields such as biotechnology, post harvest technology etc; as they could play a specific role in the future for strengthening agricultural R&D and improve productivity. The research institutes have to improve client orientation in order to enhance relevance of research to its main clients, farmers and the private sector.

Role of the private sector

Structural adjustments and increasing role of the private sector efforts towards poverty alleviation and conserving the environment have made new dimensions in agricultural research. Others such as growing urbanization, labour migration and changing food habits have made research different from mere productivity increments as in the past, emphasising more on post harvest processing and value addition. In agricultural processing and production ventures private sector investment is rapidly increasing. The private sector is expected to play a prominent role in agricultural R&D in the future. The private sector being profit motivated requires demand driven research, hence a healthy relationship between the state and the private sector has to be fostered.

At a seminar held recently organized by the Council for Agricultural Research Policy the partnership between the state and the private sector was deliberated. It was clear that the private sector investment in agriculture has increased in leaps and bounds expanding into agricultural production using modern techniques such as micro irrigation systems, poly tunnels and organic farming. Some private sector companies have undertaken seed production and distribution and even agricultural extension.

They are also entering into agricultural research. Therefore it is necessary for the state run research institutes to recognize the emerging role of the private sector and strengthen the R&D investments of the private sector organizations. In the past agricultural research was a monopoly of the state sector research institutions, however, this is rapidly changing and the present role of these institutions had to be understood.

A change in mindset has to be made to develop effective partnerships and confidence building will be required. The state research

institutes will be required to promote private sector research in priority disciplines, particularly assessed techniques such as biotechnology to foster agricultural production. Although the private sector funding for agricultural research is presently limited through effective partnerships funding could be attracted to the state institutions. The state research institutions were mainly involved in catering to the subsistent level farmers, but their research has now to focus on wider clientele.

Role of the universities

The role of the universities in agricultural development has never been assessed properly. The universities command access to well trained human resources but they have been neglected as an integral part of the national agricultural research system. The university staff undertakes both teaching and research and develop human resources for both the public and private sector organizations. There are also post graduate institutions for agriculture and science where students undertake advanced research related to agriculture. Unfortunately these have never come to the main stream of agricultural research. The role of the universities is critical for sustainable technology generation. The research policy proposes to integrate the universities with the national agricultural research system, by linking them to the national and provincial agricultural research centres. This will provide for maximising staff, infrastructure and other resources utilisation. It is stressed that collaborative research programmes, should improve the capacity of the universities particularly with the postgraduate students, through award of scholarships and specific staff development programmes. It is also important to improve the university teaching by utilizing scientists of the national research system and the private sector personnel. Their field experience will be of immense value to the students to understand the ground situation particularly with reference to employment. In India the agricultural research, education and extension are vested in the agricultural universities. As a result of this India has been able to muster support from all fields and increase agricultural production. It may be possible to integrate some of the universities or training units into similar structures to consolidate the available resources.

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The shortage of funding for research is a serious problem for the viability of many of the national research institutions. Except for those that are funded through the cess such as the tea research and sugarcane research institutes, the other agricultural research institutes and the universities have been facing severe financial crunches in the past few years. It is also noted that even global funding for agricultural research had declined over the years. The inadequacy of research funding has seriously reduced the output of technologies and the morale of the entire research system. Agricultural research has become unattractive for the funding agencies and the Government due to the low output of public good research. It is necessary for the agricultural scientists to take note of this and to be more productive; they should take corrective measures to gain public confidence and political commitment.

The national research policy in order to correct this situation proposes to lobby for enhanced funding from the consolidated fund and the private sector by publicising the visible impacts and return to investment on research. The scientists of the universities and the government institutions also should develop research programmes attractive enough for funding by local and foreign organisations in partnership focusing on the poten-

tial research areas that could have impact in the short term. Another means of fund raising is the encouragement from agribusiness, which should be coupled with their interests so that they could influence the programme content. This source of funding will be very important in the future as the private sector is gradually entering the broad arena of agricultural research. In the western countries it is the private sector companies that fund high-tech biotechnological research. The policy makers are often reluctant to allocate funds for research due to poor managerial capabilities of the research managers. This is especially in reference to fund utilisation as unproductive investments often are made or the funds are not fully utilised. Therefore the management of the research system should be improved and close liaison should be made between the research administrators and policy makers.

Such a dialogue will enable the research administrators to clarify the vital role of research in planning, organizing and implementing research for the generation of appropriate technologies. It is necessary to work closely with the farmers, private sector and other stakeholders so that the policy makers could hear their voice.

Linking with regional/international research centres

No research or any other organ-

isation could work in isolation in a rapidly changing technological environment. Therefore, links with both local research institutes, universities and regional/international research centres is most essential. Linking with other institutes will avoid duplication of research, and avoid re-inventing the wheel, which often takes place. This will also avoid the unnecessary cost and research lag in technology development. This is more applicable to high cost biotechnologies, which are common in the developed countries. Most of the developing countries could use the applications of such technologies due to constraints of funds, highly skilled scientific personnel and sophisticated infrastructure. Therefore, applications and spillovers of such technologies could be accessed through linkages with regional and international research centres. These linkages will also provide additional benefits such as exposure of staff to new technological developments for career advancement and staff development. The national agricultural research policy advocates the national research system to develop functional partnerships with government departments/institutions, universities and the private sector to share resources and information. It also promotes the development of links with regional/international research centres to benefit from the advances in high cost basic research, avoid duplication and

reduce the cost of technology development. There are further advantages of linking with international research centres as the local research system could position itself with the global research trends to respond to new challenges and to exploit the opportunities for improved efficiency and access to new technologies and information.

Transfer of technology

National agricultural research policy categorically states the highly ineffective agricultural extension system in this country, which should be immediately addressed. Technology dissemination is identified as the weakest link in the research - extension system. The agricultural extension system is presently decentralised to the provincial governments and its focus has been completely disoriented. It has no dialogue with central agricultural extension system in the Department of Agriculture. The policy also notes that the traditional extension system is no more appropriate to meet the needs of the farmers and the private sector investors. The agricultural extension system should be streamlined and modern information technology dissemination systems should be developed to attract investors, particularly the youth to take up to farming as commercial ventures. It is necessary to develop user-friendly software, which could be located at the agricultural centres (govijana kendras) in the districts with easy

access to farmers and the commercial agriculturists. This information system should provide updates on pricing of produce seasonally so that farmers could decide to grow the crops that has best market demand in that season.

Regulator mechanisms

As the private sector is more involved in agricultural exports, the existing regulatory mechanisms for import/export of planting materials and other agricultural produce should be re-examined. There are several regulatory mechanisms such as the Plant Quarantine Act and its regulations, Seed Act etc that are designed to prevent the introduction of alien plants materials, animals and other biological materials as precautions to protect the environment. Presently there is a growing demand by the private sector to have less strict procedures for imports of plant materials. Ministry of Agriculture and Livestock, considering these requests have begun to amend the Plant Quarantine Regulations to make it more flexible to assist the private sector investments in agriculture, in keeping with the global conventions and bio-safety regulations. The Cabinet has approved the Seed Act, but its regulations have to be drawn up soon. In addition to the above there are other important regulations, which should be formulated quickly. These include the regulatory procedures on bio safety, which include the import of genetically modified materials, and the Plant

Breeder's Rights, which allows the plant breeders to retain the right to their innovations. These have to be formulated to enable the private sector to use such innovations, like the improved varieties to crop plants or improved livestock breeds without any problems. These issues directly affects R & D of the agricultural sector.

Policy research

Policy research is another aspect that the research system should be concerned about as it requires a favourable and enabling policy environment to meet the challenging trends of agricultural research. This is particularly important due to trade liberalization and open economic policies currently implemented by the Government. These policies affect both domestic agricultural production and exports. The national agricultural research policy proposes to undertake policy research in relation to economic and social impacts of the past research, trade policies and international conventions in order to advise the national agricultural research system and the policy makers. This will facilitate making demand forecasting projections for agricultural produce on short, medium and long term basis in the context of progressive deregulation of economic activities.

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