CURRENT STATUS OF THE INTEGRATED SEED SECTOR IN MALAYSIA

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BACKGROUND ON THE SEED INDUSTRY IN MALAYSIA

Historically, the agriculture sector in Malaysia has been dominated by the plantation crops especially rubber, oil palm, and cacao. In 1970, the Malaysian government launched the “Buku Hijau” (Green Book) Policy based on recognition of the importance of food crops with the aim to increase local production and reducing the food import bill. This policy also enhanced the awareness on the importance and benefits of high quality seeds.

Modernisation of the national seed industry in Malaysia started with the implementation of National Seed Project (NSP), which received aid in the form of loan from the World Bank in the year 1979. The implementation of NSP led to the establishment of seven seed testing laboratories and seed processing plants. The Department of Agriculture (DOA) and Malaysian Agricultural Research and Development Institute (MARDI) has since involved in supplying quality seeds and planting materials to the farmers. To date, there are nine seed processing centres and 10 seed testing laboratories have been developed especially for paddy seeds. As for capacity building, the Universiti Putra Malaysia (UPM) formerly known as Universiti Pertanian Malaysia (Agriculture University of Malaysia) began offering Seed Technology courses to undergraduates since the 1980’s and later to postgraduates in 1990’s. Now, UPM is known as a centre of excellence for research and the teaching of seed science. Working in tandem, MARDI has also established the Production and Seed Technology Unit in 1981, which upon to restructuring of the institution in 2002 became the Planting Material, Seed and Livestock Production Unit with the main function producing quality planting materials and seeds of crop varieties produced by MARDI and those recommended by Ministry of Agriculture and Agro-based Industry (MOA) and maintaining the purity and quality of planting materials.

The strategic plan of Third National Agriculture Policy (1998-2010) outlines the important of active private sector involvement in the production of planting materials to better address the needs and adequate supply of quality planting materials for the country. In 2008, the National Seed Association of Malaysia (NSAM) was established as an official forum for producers, exporters, importers, scientists and extension agents to interact in matters related to the seed crop industry. In year 2011, the National Seed Council (NSC) was established under the MOA. The Seed Crop Technical Committee was established under the NSC chaired by Director General of DOA. The committee drafted the National Agro-food Policy and was approved by the Malaysian Cabinet on 28 September 2011, effectively replacing the National Agriculture Plan. The 10 years policy has been put in place to address the issue of food supply in Malaysia.

Important factor contributes to the development of the seed industry in Malaysia is to have the “Legislation” in place. The Protection of New Plant Varieties
(PNPV) Act was enacted in year 2004 and come into force since 20 October 2008. To date, there are 94 applications for the protection of new plant varieties comprises of industrial crops (9), cereals (18), fruits (11), ornamentals (28), mushroom (3), herbs (1), forestry plants (19) and vegetables (5). Twenty five Newly Protected Varieties were recently gazette in 2012 are Chrysanthemum (3), Dendrobium (2), Acacia (19) and Papaya (1).

DOA has implemented Seed Certification Scheme for rice seed production since 1970’s and production of certified rice seed has reached more than the country requirement. Recently, the Seed Certification Scheme for fruits clonal seedling was launched to achieve seedling production of trueness to type and of high quality. DOA is drafting Seed Act to move from voluntary to mandatory participation in seed certification scheme.

CONSTRAINTS IN DEVELOPING THE SEED INDUSTRY IN MALAYSIA

In the past, Malaysia did not emphasize on production of seeds other than for rubber, oil palm and rice. Currently, Malaysia relies on imported seed for vegetables (90%), corn (95%) and melon (100%). Therefore, five major constraints that Malaysia facing in developing the seed industry areas follows:-

1. Lack of new local varieties

   Local seed production is low and unable to meet local demand because our local inbred varieties are unable to compete with the superior imported hybrid varieties.

2. Lack of mandatory seed quality control system

   There is no enforcement of seed quality control system yet in Malaysia. However, DOA has established a voluntary seed and planting material certification scheme which covered rice and fruit clones in 2010. The scheme is envisaged to help prepare the agricultural community for the introduction of the Seed Act, which is being drafted.

3. Unorganized information on seed industry

   There are various agencies involved in the seed industry but their functions are not well coordinated. Inefficient sharing of information led to ineffective planning, monitoring and evaluation of the industry. Currently, there is no integrated data management system available to players in of the seed industry.

4. Inadequate number of trained personnel in the seed industry

   In the last twenty years, few new varieties were produced, partly due to the lack of emphasis on agricultural research funding and trained manpower. Therefore, job prospects need to be created in public and private research institutions to increase recruitment of plant breeder (from 30 to 300) and seed technologist (from 10 to 100). Besides, graduates have no interest in plant breeding and seed technology is due to lack of job prospect. Thus, universities are not giving focus on
plant breeding and seed technology in their curriculum. Only Universiti Putra Malaysia offers seed technology courses for undergraduates and postgraduates. Hence, local seed producers are unable to recruit young qualified plant breeders and seed technologists.

5. Lack of private sector involvement

Private seed companies are only interested in seed trading rather than production of vegetables and corn seeds. This resulted in slow development of the local seed industry, which is not unable to grab opportunities in the global seed market.

FUTURE DRIVERS TO STRENGTHEN THE SEED INDUSTRY IN MALAYSIA

To ensure sufficient supply of quality seeds and to develop the seed industry, strategic areas to strengthen the industry are as follows:

1. Conducive Policy for the Development of Seed Industry

In year 2011, National Agro-food Policy was approved. It focuses on the agro-food sectors development in ensuring food supply and to improve food processing and increasing high-value exports. It also aims to increase food production and people’s income, besides avoiding any food crisis in the country. This is in line with the Government Transformation Plan, New Economic Model and Economic Transformation Programme as the prime foundation for Malaysia’s development towards achieving Vision 2020. It will not only be the guideline for the government but also for the private sector in making the agro-food policy competitive and sustainable. The Malaysian government through its Economic Transformation Programme also included the development of seed industry as one of the Entry Point Programme, EPP 14 in the National Key Economic Area (NKEA) under Agriculture. The objectives of EPP 14 are to ensure sufficient supply of quality seed and to develop superior crop variety for local and export market needs. The Centre for Marker Discovery and Validation (CMDV) was established in 2010 to assist breeders in using marker-assisted selection (MAS) in breeding of superior variety.

2. Capacity Building to Strengthen the Seed Industry

The Malaysian government focusing in strengthening the local seed industry by providing incentive for the production of certified seed to attract private participation to this industry. Government also provides funding to improve competency of existing human resources through attachment training local/international, short term course; graduate and post graduate studies. The higher learning institution such as university, polytechnic and community college are encouraged to include subjects on plant breeding and seed technology in the curriculum. This effort could encourage students to become plant breeder and seed technologist in future. The institutions are encouraged to develop networking with international seed organization such as International Seed Federation (ISF), International Seed Testing Association (ISTA) and Asia Pacific Seed Association
(APSA). Creating and organizing a National Seed Award such as Royal/Prime Minister/Minister award will increase public interest in plant breeding.

2. Development of the Seed Industrial Zone

A seed Industrial Zone will be developed at the Permanent Crops Food Production (TKPM) Bukit Sapi, Lenggong Perak (80 ha) for the production of breeder, foundation and certified seeds. The activities in this area shall involve plant breeding which focuses on developing superior varieties of vegetable, maize and melons; production, processing and storage of seeds; and seed testing.

3. Strengthen the Implementation of Seed Quality Control System

Control of seed quality could be achieved through effective implementation of the Seed Certification Scheme. To further strengthen the scheme, the Government plans to upgrade eight existing seed testing laboratories; establish two new seed testing laboratories located in Sabah and Sarawak and the National Seed Testing Laboratory in Selangor. These seed laboratories shall be International Seed Testing Association (ISTA) accredited. Implementation of the Seed Certification Scheme shall lead to the enactment of the Seed Act.

4. Establishment of Centralised Integrated Data Management System

Malaysian seed industry database system has to be developed as online basis by establishing the centralised Integrated Data Management System. The activities should involve database on seed supply and demand, imported seed, exported seed etc.; establishment of DNA fingerprinting database for protected varieties to work with CMDV; establishment of national listing and recommended list for cultivation database; setting up online gene bank database and monitoring and reporting performance of the seed industry.

CONCLUSION

Ministry of Agriculture and Agro-based Industry is a focal point and responsible in driven the EPP 14 to strengthen the integrated seed sector in Malaysia and ensure the security of food supply for the country. Its focus in increasing local seed production and reduce seed importation; produce superior varieties that are able to compete with varieties in the global seed market and increase availability of quality seeds and planting materials in the market.

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