

National Rice Development Strategy

Country : Malaysia

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Introduction: Current status of rice sector

Staple food of the Malaysian community

-79 kg per capita

Strategic crop:

-food security

-poverty eradication

-and other social and political concerns



Total planted area

Total planted area (DOA 2013):	688,207ha
Physical lowland rice area:	385,683 ha
Peninsular Malaysia: 76%	
Sarawak: 18%	
Sabah: 6%	

Major irrigated granary rice areas

(52% total physical areas 87% of rice cultivated area)

-Muda, Kemubu, North West Selangor, Kemasin-Semarak, Kerian-Sungai Manik, Pulau Pinang, Ketara, and Seberang Perak

New and expanded granaries (19,000ha):

-Kota Belud (Sabah), Batang Lupar (Sarawak), Rompin and Pekan (Pahang)

Mini granary areas:

-provided with extensive irrigation and drainage facilities, adjacent to major granaries or isolated areas



National rice Production

The national average productivity: 3.8 t/ha
Average yield in the granary areas: 4.7 t/ha.

Production sites:

Irrigated areas: 85%
- Irrigated Granaries: 66%
- Irrigated non-granaries: 19%
Hill paddy & rainfed: 15%



Total paddy and rice production (DOA,2013):

-Paddy: 2,626,881 t

-White rice: 1,693,852 t

-Self-sufficiency level (SSL): 71.4%

-Major source of imported rice (Thailand, Vietnam and others)



Targeted SSL (MOA, 2011):

- 65% to at 70%

Taken into consideration:

- food security

- requirements and obligations to:

- AFTA

- WTO

- and other national economic considerations



The current rice import policy:

- Import volume depends on the production of local rice
- Padiberas Nasional Bhd (BERNAS) has the sole right
- Import volume to cover shortfalls of demand after ensuring the local rice production finds its way to the market
- BERNAS also imports special rice varieties (basmati and fragrant rice)
- Import volume:
 - 2013-14: 1.1 million tons
 - 2012-2013: 1.05 million tons



Main challenges and opportunities

Challenges towards improving rice production in Malaysia:

- Raising production costs
- uncertainty of climatic conditions
- population increase
- limited land resources



Risks with rice importation:

- Small amount of global traded rice (7% of world production)
- Lower production in producing countries would reduce export volume.

Rice crisis 2008:

- within a few months, prices increased from US\$300/t to US\$1000/t.
- after the crisis ended, the rice price remained at US\$600/t
- the ending era of cheap rice in the world market



Challenges towards maintaining 70% SSL:

- increasing population size (2.5% growth per annum)
- decreasing of agricultural land, competition for other uses, the need to
- maximize land productivity, to produce more from less land area
- Competition for water usage. Currently 80% of the total water consumption is for irrigation (Facon, 1999), demand from domestic and industrial sectors will increase exponentially, urgent need to increase water productivity so as to sustain sufficient water for paddy cultivation



Challenges towards maintaining 70% SSL (cont):

- **Global warming:** Erratic and extreme weather conditions, frequent floods and droughts, -production decrease, 1% per °C increase in nighttime temperatures, need for new plant breeding technologies , crop management to reduce or mitigate the effects
- **Rice has to be grown with less water with the development of drought tolerant varieties, aerobic rice and improvement of hill rice production system**
- **Pests and diseases:** may pose great challenge for crop cultivation in the future, excessive and indiscriminate use of chemicals and the emergence of new resistant breaking strains of pests and diseases
- **Rural-urban migration:** declining farm labor availability, rice cultivation with less labor-intensive activities, reduction in cost of production, providing good return from investment



Development plans and goals of rice sector

MOA is to:

spearhead the agriculture sector transformation process

- emphasis on food security, ensure the sustainability of the food supply, food accessibility and affordable food prices to the public.**

NAP aims to:

increase food production to meet the growing demand, increase in the contribution of the rice production to national income, agriculture entrepreneurship development

The main focus of this policy is to:

to increase the production and productivity to ensure food supply, exploration of high-value agriculture, strengthening supply chain, implementation of sustainable agricultural practices, human capital development , more participation by the private sector and effective government support (MOA, 2011)



Rice Production Expectation:

- 79.6 kg/person/year and population growth of 2% p.a
- 2014: needs 2.3 mil t of white rice
- 2020: 32.37 million people, needs 2,577 mil t of white rice
- At 95% SSL, then productivity must be increased to 6.12 t/ha of paddy
- At 72% SSL, the productivity must be increased to 4.64 t/ha of paddy
- Current productivity: 3.8 t/ha of paddy



Ensuring the stability and continuity of national rice production:

Rice subsidy policy as a mechanism to promote and increase production to fulfill three main objectives:

- To ensure food security
- To improve farm productivity and farmers income
- To ensure the consumers get the staple food at an affordable price

Identification of rice production as one of the National Key Economic Areas (NKEA) under the Economic Transformation Programs

-NKEA agriculture will focus on the sub-sector that has greater potential of growth, focuses on strategic sub-sector to ensure the country's sufficient food supply, including:

- EPP 9 (Introduction and cultivation of fragrant rice varieties in idle land and non-major granaries)
- EPP 10 (Increasing productivity and cultivation of rice in Muda granary)
- EPP 11 (Increasing rice cultivation and productivity in the other granaries (including KADA, Kemasin Semerak IADA and KETARA).



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Stockpile management

Stockpile management mechanism will be improved to ensure more strategic management and cost-effective

- long-term contractual agreements for importing rice with matching agreement of oil palm and oil are signed**



Implications or strategies for national rice R&D

- **The Agro-food sector in Malaysia must be transformed through R&D outputs.**
- **Enhancement of R&D, innovation and use of technology**
- **The principles of 10-20-70 (FAO):**
 - 70% should be realized through R&D, innovation and policy initiatives
 - 10% through land expansion
 - 20% increases should be through crop intensification



Implications or strategies for national rice R&D-cont

- **Reduction of production gaps between potential and actual yield**
- **Establishment of research network of smart partnerships to enhance capacity building in R&D, integration and consolidation of R&D initiatives, resulting in outcomes benefiting the nation as a whole**
- **R&D to be geared towards:**
 - improving productivity/efficiency, development of value added products, sustainability and other related R&D, to keep SSL at a comfortable level, managed to reduce foreign exchange by reducing imports, increase farmers income, gradually lessen government subsidy to the industry



Roles of MARDI

MARDI spearheaded rice research in Malaysia together with universities, agencies and private organizations participation

R&D conducted by MARDI follows national research agenda, but focuses on the technology generation

Selective R&D activities (by MARDI) are based on multiple challenges to:

- increase competitiveness**
- sustainability and food security**
- environmental sustainability**
- attractiveness to private investment**
- should also in line with market and customers requirements who will adopt the relevant technology and innovation.**



Research and development themes on rice

- Varietal development
- Pest and disease management
- Sustainable and precision crop management
- Farm mechanization and post-harvest handling
- Adaptation and mitigation to climate change
- Development of early warning system in the management of diseases and pests
- Post harvest technologies to increase production
- Rice quality and utilization
- Technology transfer, policy rationalization, competitiveness and supply chain.



The major challenges for the researchers:

- to increase the level of productivity (t/ha/season)
- to increase in cropping intensity to 200 % or 250 % a year
- to develop a more efficient rice production in rain-fed and marginal areas



Possible common development objectives across the region

- **Common basic studies on rice sciences**
- **Germplasm sharing:**
 - **through various common biotic and abiotic nurseries, a means of sharing and obtaining donor parents for utilization in the breeding program for resistance to biotic (pest and diseases and abiotic stresses (salinity, heat and drought tolerance)**



Thank You

