

Irrigation Management Modernization

Country Assessment Malaysia

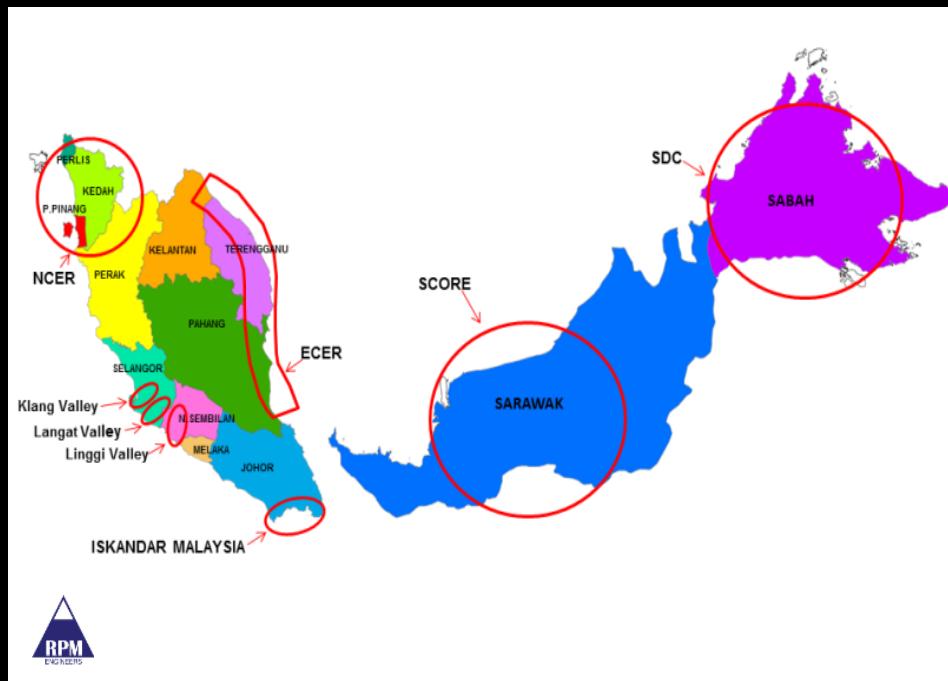
This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.



Irrigation Management Modernization



Malaysia Development Corridors (National Physical Plan 1)

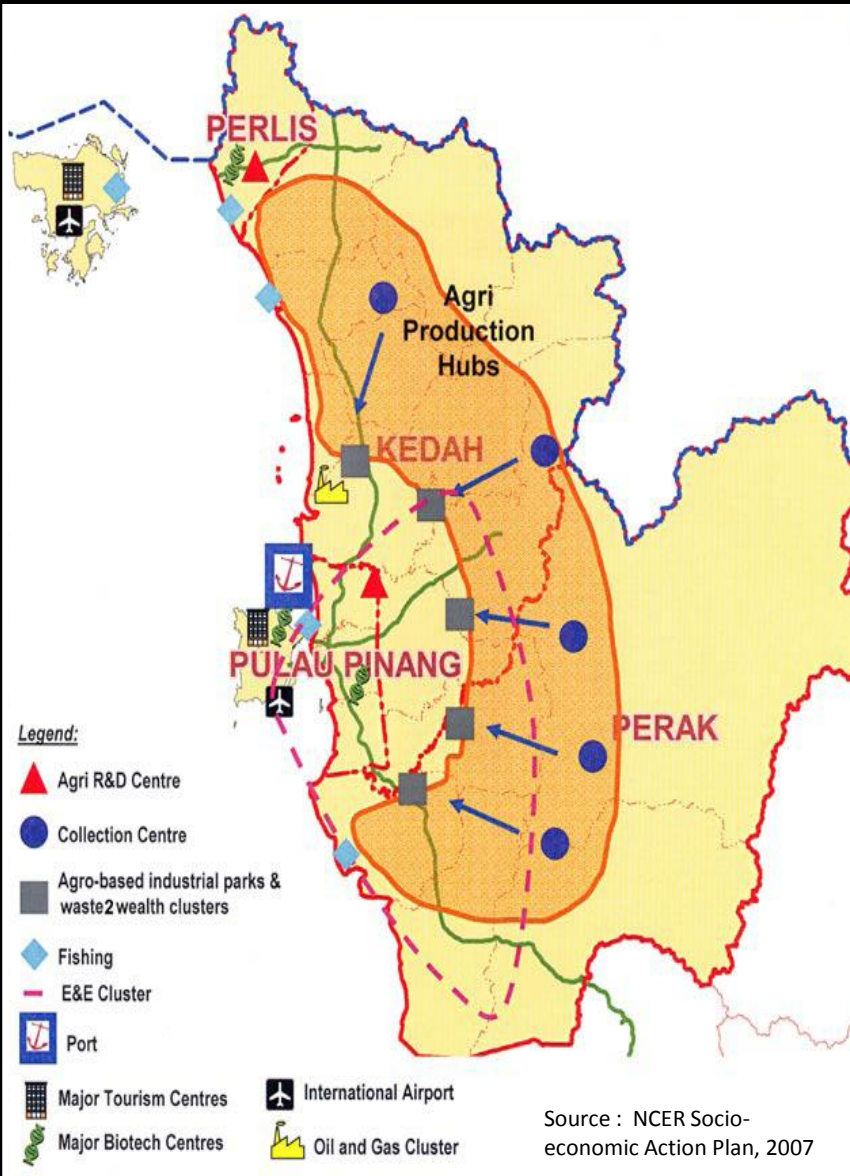


Development Strategy

- Based on development corridors
- Theme is based on regional strength
- Spread development over the country
- Relieves resources stress from the Klang Valley (Kuala Lumpur) and adjacent areas

Focus Region: Northern Corridor Economic Region (NCER)

- ICT and Tourism in the Penang and Surrounding areas
- Agriculture Hub adjacent areas



The Driest Region in Peninsular Malaysia

- 3 out of 8 Granaries are in this region
- Water Resources is becoming scarce
- Inter-Sector competition increasing
- Agriculture in control of water resources facilities (Muda, Pedu, Ahning Dams)

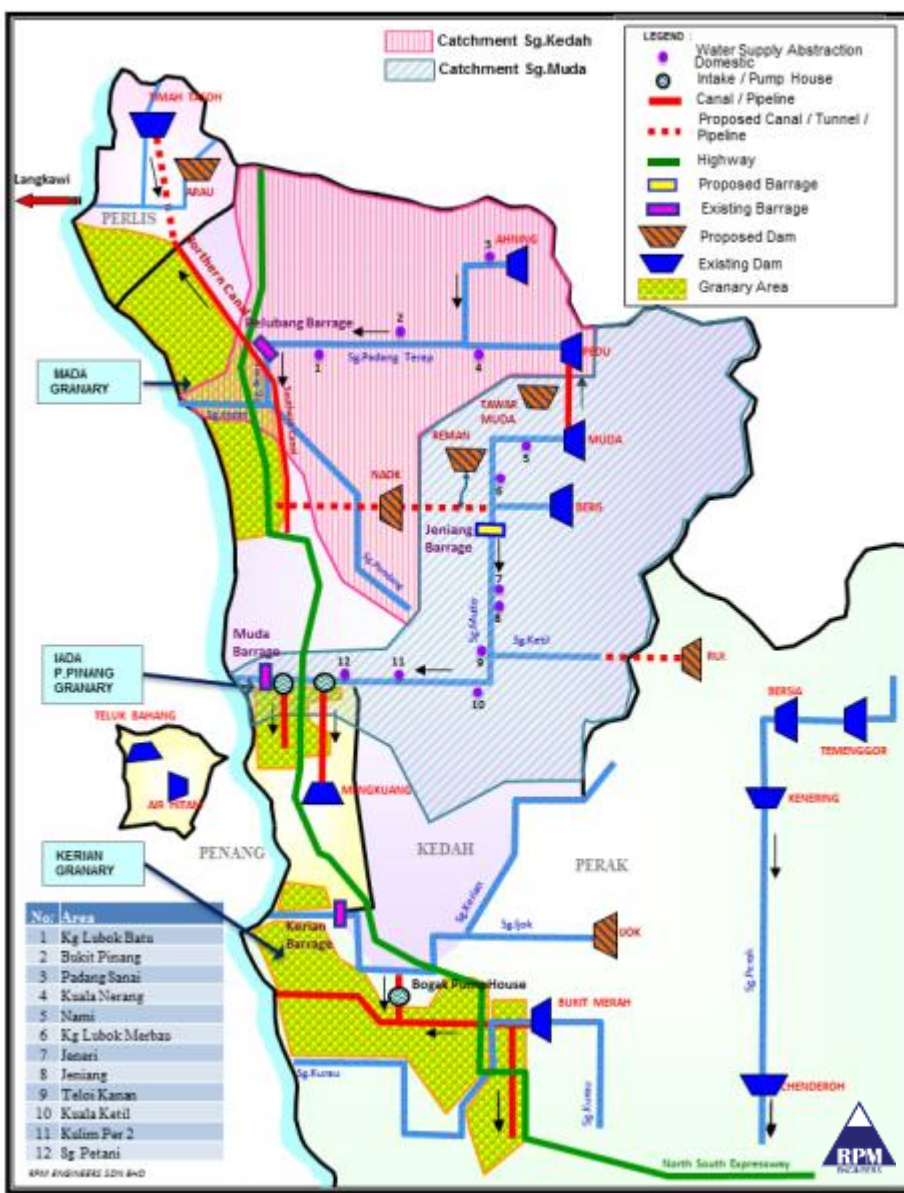


Table 1: Consumption Water Demand and Unregulated Flow Excess/deficit.

States	Land Area sq km	Total Consumptive Water Demand (mm)					Effective rain (mm)	Excess/deficit (mm) - Unregulated Flows				
		2010	2020	2030	2040	2050		2010	2020	2030	2040	2050
Perlis	821	372.3	364.2	348.0	345.5	342.3	71	(302)	(294)	(277)	(275)	(272)
Kedah	9,500	307.6	313.2	299.1	302.4	302.8	113	(195)	(201)	(187)	(190)	(190)
Putau Pinang	1,048	720.4	791.3	797.5	834.4	853.2	120	(690)	(671)	(677)	(714)	(733)
Perak	21,035	92.7	91.6	85.5	85.6	86.1	140	47	48	54	54	53
Selangor	8,396	266.6	296.6	306.0	328.7	348.0	114	(153)	(183)	(192)	(215)	(234)
Negeri Sembilan	6,686	51.0	54.1	53.6	54.7	56.0	74	23	19	20	19	18
Melaka	1,864	193.9	220.1	225.9	246.0	263.4	86	(198)	(135)	(140)	(161)	(178)
Johor	19,210	37.2	45.8	53.8	60.6	67.7	171	134	125	117	110	103
Pahang	36,137	20.1	26.2	24.8	25.2	26.5	165	145	139	140	140	138
Terengganu	13,035	67.8	74.8	74.4	76.7	78.7	254	186	179	179	177	175
Kelantan	15,099	108.1	107.2	105.0	106.0	106.2	178	67	68	70	70	69
Peninsular Malaysia	132,831	96.5	103.1	102.2	105.9	109.2	159	62	56	57	53	50
Sabah	73,631	12.4	18.4	18.9	19.6	20.0	177	165	159	158	157	157
FT Labuan	91	197.7	264.3	285.0	304.0	318.0	323	125	98	37	19	4
Sarawak	124,450	8.4	17.3	17.0	17.5	18.0	221	212	203	203	203	202
East Malaysia	198,172	10.8	17.9	17.9	18.4	18.9	269	258	251	251	250	250
Total Malaysia	330,803	44.7	52.0	51.7	53.5	55.1	225.0	100.3	173.0	173.3	171.5	169.0

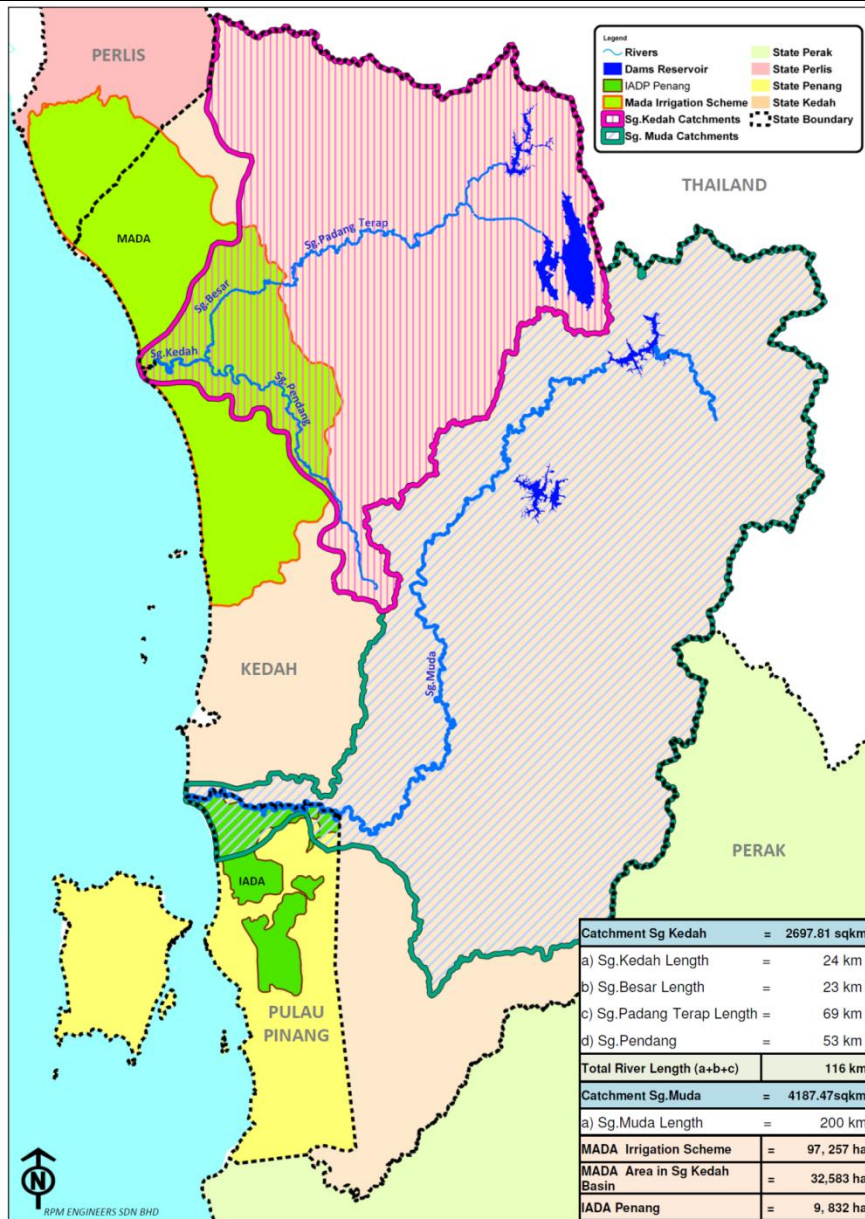
Note: Water Deficit States highlighted in yellow colour

Source: NWRS Review 2000-2050

The Focus Scheme is MADA

The largest and most important Granary in Malaysia

- 23% (96,558 ha) of total national production area
- Contributes 40% of total country's production



History of Irrigation Modernization



Irrigation Management Modernization



History of Irrigation Modernization



Irrigation Management Modernization



Drivers of Present Irrigation Management Modernization



Irrigation Management Modernization



Drivers of Present Irrigation Management Modernization



Irrigation Management Modernization



EXECUTIVE SUMMARY



ECONOMIC TRANSFORMATION PROGRAMME



A ROADMAP FOR MALAYSIA

131 Entry Point Projects
60 Business Opportunities
RM48,000 (US\$14,000) GNI per capita
3.3 Million Jobs



Achieving High-income Status by 2020

The Government defines the high-income threshold at a per capita income of about RM48,000 or USD15,000 in 2020, based on World Bank's current definition of high-income. Therefore, achieving high-income status by 2020 will require an annual real growth rate of about 6 percent in the next 10 years (Exhibit 1).

USD 15,000

GNI per capita 2020



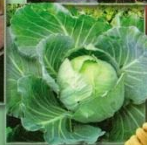
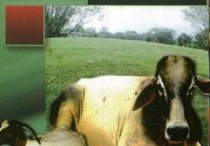
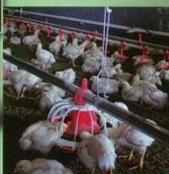
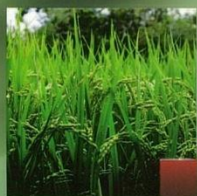
Irrigation Management Modernization





MINISTRY OF AGRICULTURE
AND AGRO-BASED INDUSTRY

NATIONAL AGROFOOD POLICY 2011-2020



Irrigation Management Modernization



Objectives of the National Agro Food Policy (NAP)

The objectives of NAP, 2011-2020 are:

- i. Ensure adequate food supply and food safety
- ii. Develop the Agro Food industry into a competitive and sustainable industry
- iii. Increase the income level of agricultural entrepreneurs



Irrigation Management Modernization



Strategic Directions of the National Agro Food Policy

Strategic Direction I	Ensure national food security
Strategic Direction II	Increase the contribution of the Agro Food industry
Strategic Direction III	Complete the value chain
Strategic Direction IV	Strengthen human capital
Strategic Direction V	Strengthen R&D activities, innovation and technology use
Strategic Direction VI	Create a private sector-led business
Strategic Direction VII	Strengthen the service delivery system



Irrigation Management Modernization



Eight Main Ideas of National Agrofood Policy

1. **Food Security – Adequacy, Availability, Safety and Affordability.**
2. **High Value Agricultural Development.**
3. **Sustainable Agricultural Development.**
4. **Dynamic Agriculture Cluster, Maximising Income Generation.**
5. **Private Investment as a Catalyst for the Transformation of Modern Agriculture.**
6. **Smart and Informative Human Capital in Agriculture.**
7. **Modernisation of Agriculture driven by Research and Development (R&D), Technology and Innovation.**
8. **Excellent Agricultural Support Services.**



Irrigation Management Modernization



Increase Food Production and Supply

- The SSL for local rice is maintained at 70% and the opening up of new rice granary areas will not be encouraged.
- The rice SSL of 70% will be reviewed from time to time taking into consideration to the security of rice supply in the country, global rice market scenario and relative cost of imports.
- Rice production in the existing granary areas will be more intensive with the provision of adequate irrigation and drainage infrastructures especially in areas with the potential to be developed.



Irrigation Management Modernization



Modernization Objectives

- The SSL for local rice is maintained at 70%
- Rice production in the existing granary areas will be more intensive with the provision of adequate irrigation and drainage infrastructures
- Increased Income to match other sectors
- Commercial farming
- Higher Service Delivery

Issues to address:

- Competition for water
- Environment
- Floods
- Soil Damage by Machinery
- Scheduling issues due to “brokers” of service providers
- Deteriorating Water Quality



Irrigation Management Modernization



ABCDEF Approach

Accounting

- Review of National Water Resources (resources study on water availability; sectorial demands and supply; development plans) (2012)
- Need to improve measurement in irrigation (Now based on traditional estimation of efficiency)
- Need to establish a water accounting system and auditing system (acceptable to other sectors)
- Need to commit on water savings strategies and action plans and targets (for inter-sector management and commitment)
- Need to establish water quality monitoring system



Irrigation Management Modernization



ABCDEF Approach

Bargaining

- To negotiate with present farmers to accept and participate in the Exit Plan
- To negotiate with other sectors on water allocation and water saving plans (Water Supply; Tourism; Aquaculture)
- To develop new service levels with farmers especially the commercial farmers (BERNAS)
- To establish Risk Management Approach
- To establish insurance or compensation plans for damages (floods/droughts)
- To agree on water quality targets and environmental water requirement



Irrigation Management Modernization



ABCDEF Approach

Codification

- Activate the National Water Resources Policy (2012)
- To codify inter-sector demand management plans
- Review of the Irrigation Act (Protect Investment; Scheme Management Rules and Regulations)
- Adherence to current policies (ETP; Agro Industry Policy; Greentech Policy)
- Codify Service Levels for Commercial Farming
- New rules and regulations for service providers (Machineries)
- New standards for agriculture water discharges
- Review rules for disaster management (floods and droughts)



Irrigation Management Modernization



ABCDEF Approach

Delegation

- To select and approve commercial enterprises to take over production in the Granaries (as per exit plan) (BERNAS; Farmers' Organisation)
- In the interim, strengthen WUGs/WUAs; retraining of exiting farmers
- Restructuring of the Engineering and Technical Services into one single Department (to attract professionals) (Draft Proposal Ready; Agricultural Engineering Department)
- In the Interim, to propose the Irrigation and Drainage Division be re-designated as a Department with its own service scheme
- Establish Centres of Excellence (MADA)



Irrigation Management Modernization



ABCDEF Approach

Engineering

- Install tertiary systems in all the remaining irrigation blocks in MADA (Approves under the ETP; RM 2 billion in 15 year; started)
- Plans for water resources enhancement (Jeniang Transfer Scheme) (Need to negotiate with other sectors; States on operating rules)
- Develop modelling tools for water management and strengthen existing management systems (telemetry and decision models)
- Develop forecasting tools
- Install integrated flood management system (on-going)
- Install Water Quality Monitoring System
- Develop Greentech approach to irrigation system development
- Review planning and design criteria and to include climate change issues
- Review Operations and Maintenance Standards
- Develop Service Level Standards



Irrigation Management Modernization



ABCDEF Approach

Feedback

- Promote MASSCOTE as the accepted feedback tool for irrigation performance evaluation and basis for modernisation plans
- Periodic Review of the National Water Resources (latest 2012)
- Establish Accounting and Audit Reporting System
- Establish State of Irrigation Reports (LUAS already started for State of Water Resources Report)



Irrigation Management Modernization



Status

- Dialogue No 1 : 21 Jan 2013 (Stakeholders)
- Dialogue No 2 : 25 Feb 2013 (Experts)
- Dialogue No 3 : Top Level Policy Makers
- National Workshop : Stakeholders
- Reports :



Irrigation Management Modernization

