



REPORT ON BENCHMARKING PERFORMANCE IN THE IRRIGATION AND DRAINAGE SECTOR (MALAYSIA)



INTRODUCTION

National Agricultural Policy (NAP3; 1992-2010)

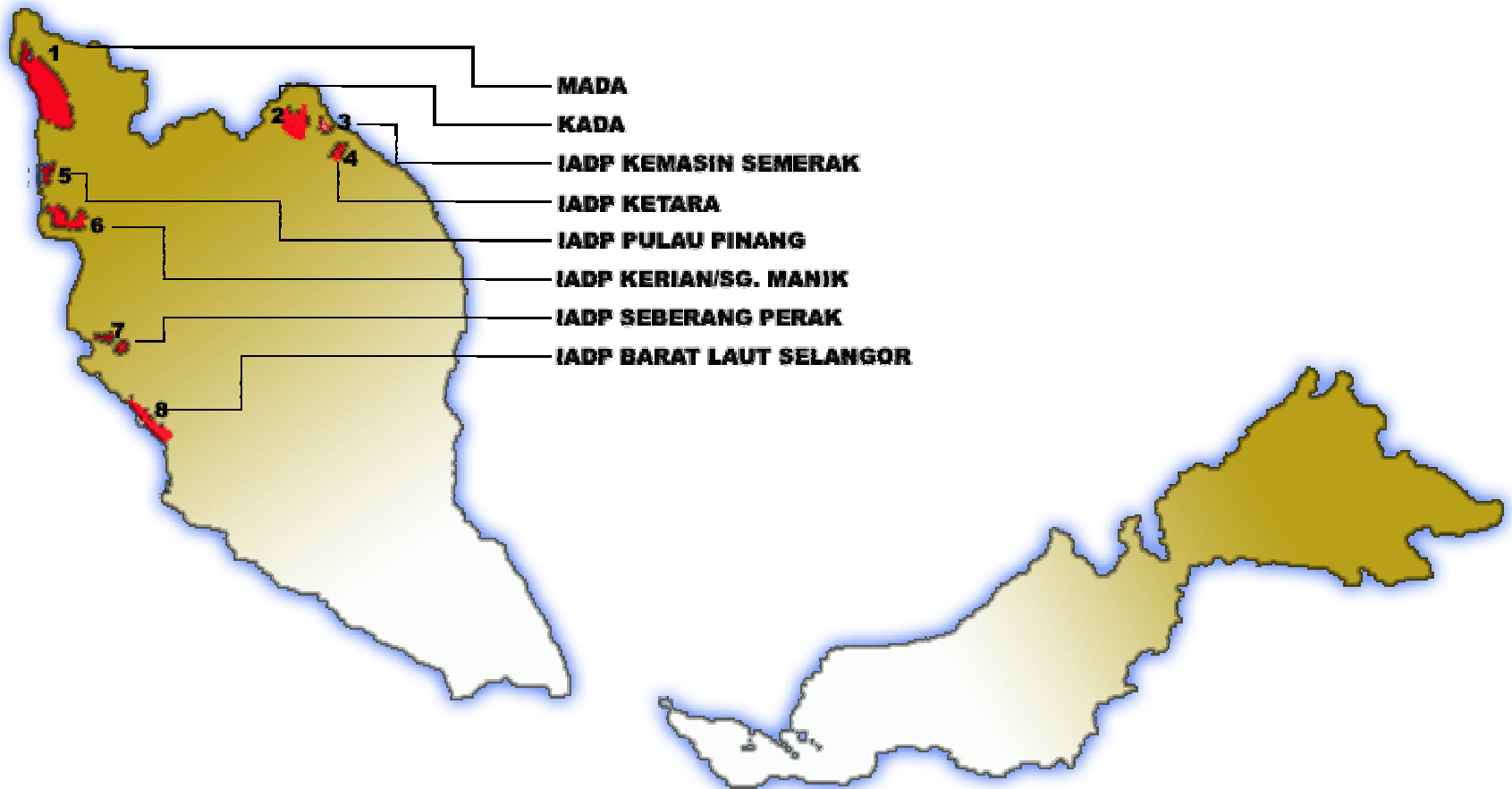
Malaysia Government aimed:

- to produce 2.3 million ton rice by 2010**
- to achieve 65% self sufficiency level**

Designated 8 strategic granary areas

- MADA**
- KADA**
- IADP Barat Laut Selangor**
- IADP Seberang Perak**
- IADP Kerian/Sg. Manik**
- IADP Kemasin/Semerak**
- IADP Ketara (Besut)**
- IADP Pulau Pinang**

Location Map of Granary Areas in Malaysia





Target Performance Indicators are:-

- **Water Productivity Index; $WPI = 0.4 \text{ kg/m}^3$**
- **Relative Water Supply; $RWS = 1.65$ (60%)**
- **Cropping Intensity; $CI = 190\%$**

REPORT



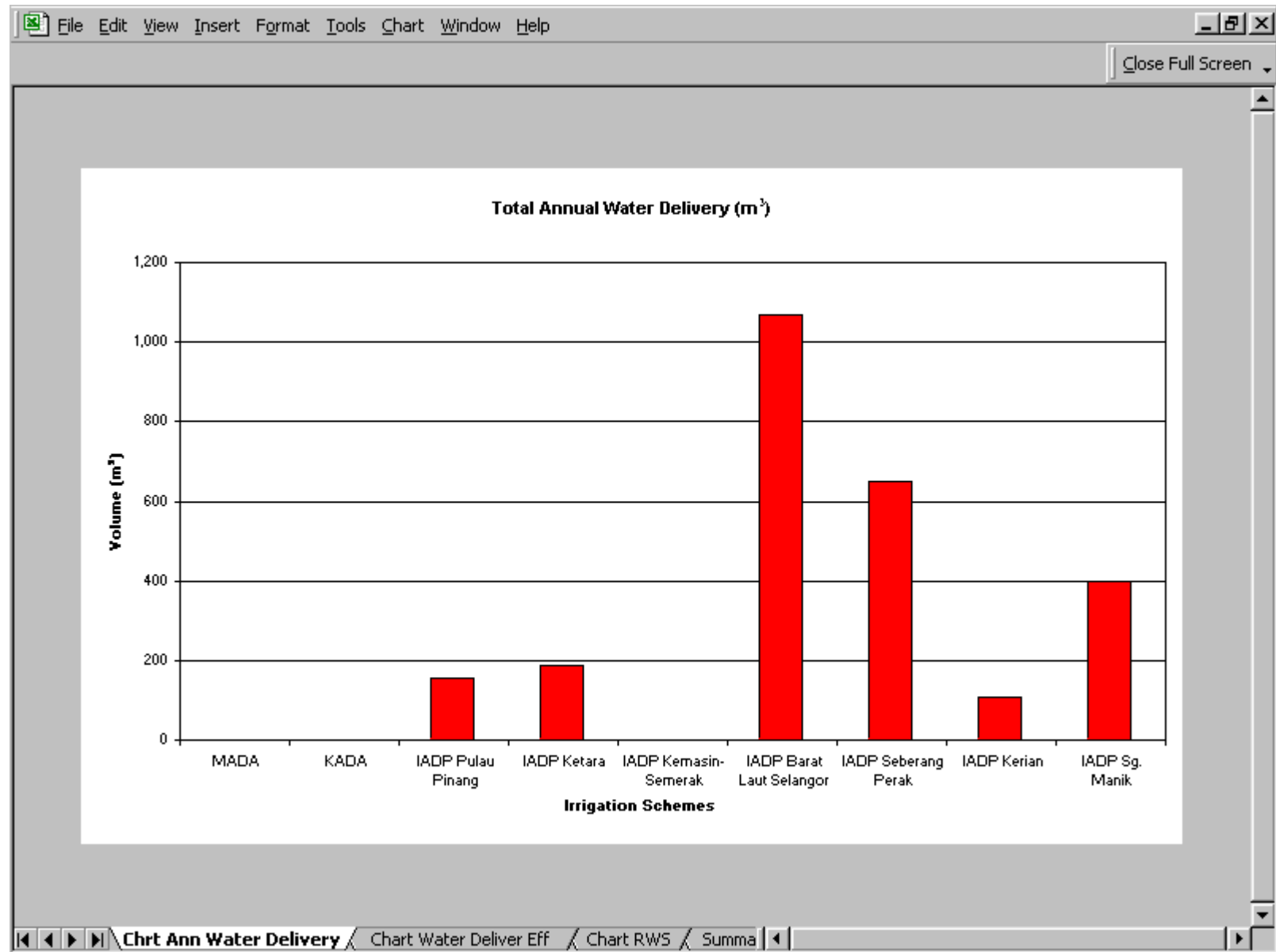
Current Status:

- Benchmarking action group
- Workshop on benchmarking; frontliners

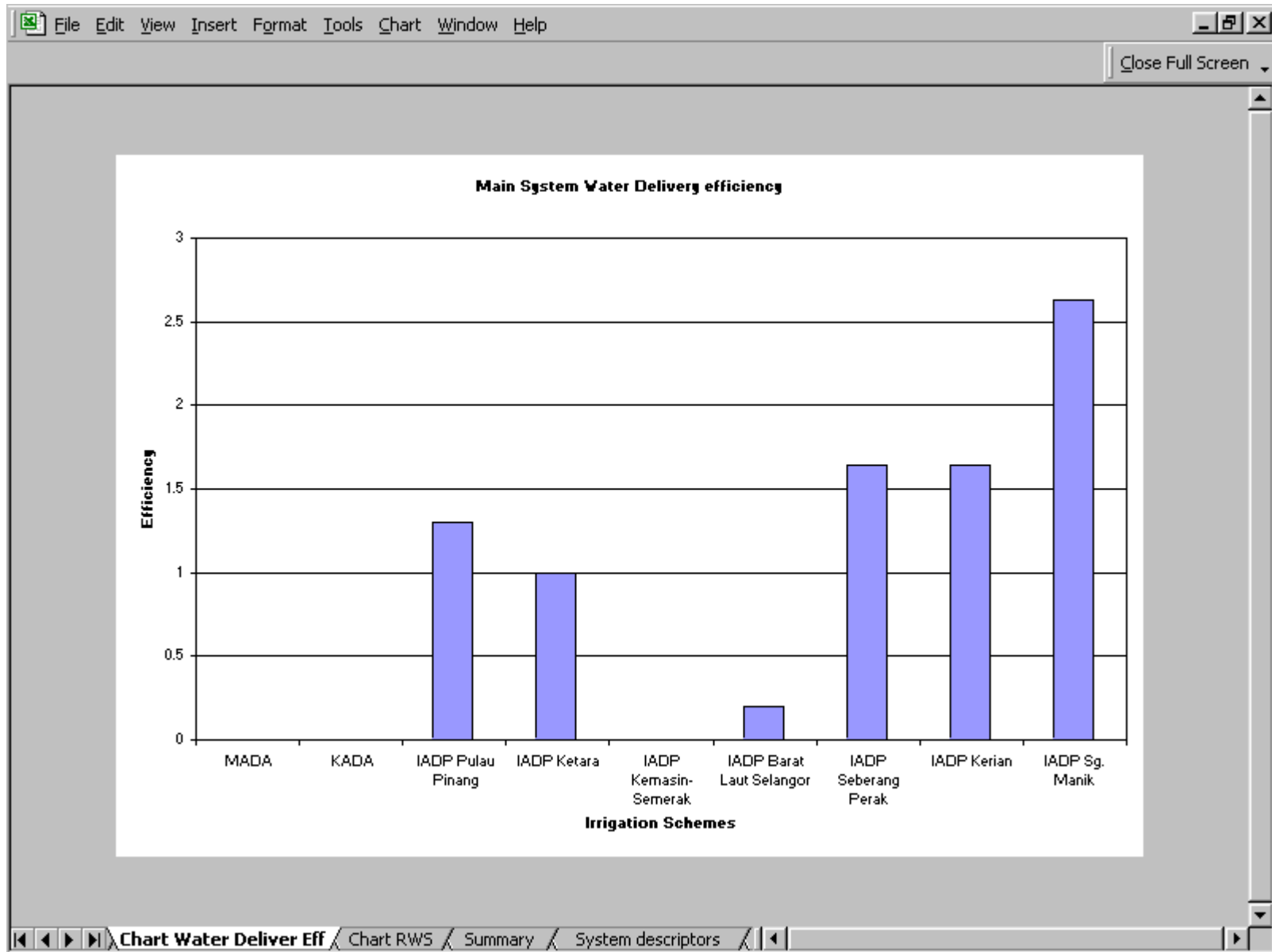
3. Data capture:

	Items	%Achieved
1.	Summary of benchmarking indicators	30%
2.	System descriptors	95%
3.	Irrigation service delivery	60%
4.	Financial performance	0%
5.	Productive performance	40%
6.	Environmental performance	0%

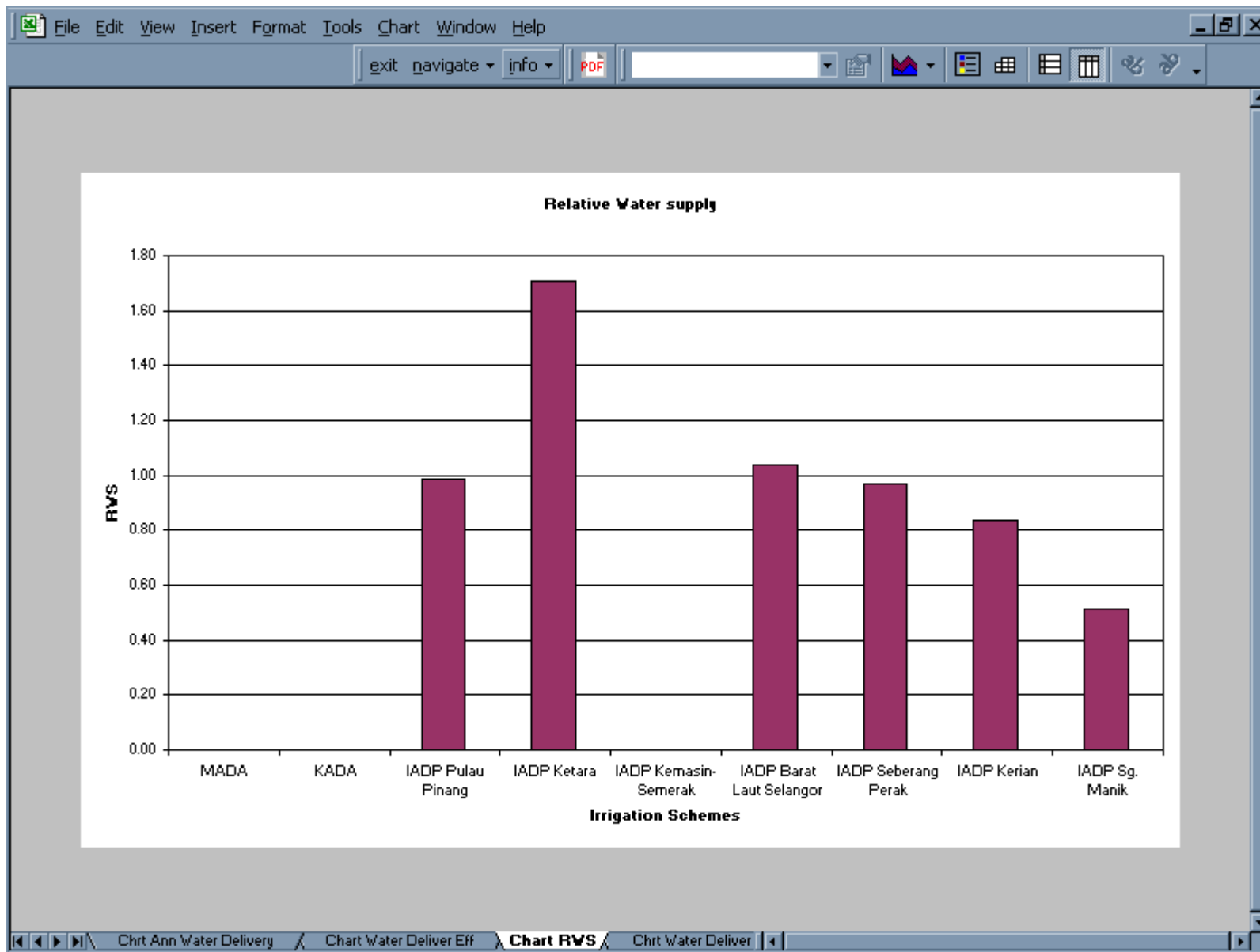
Total Annual Water Delivery



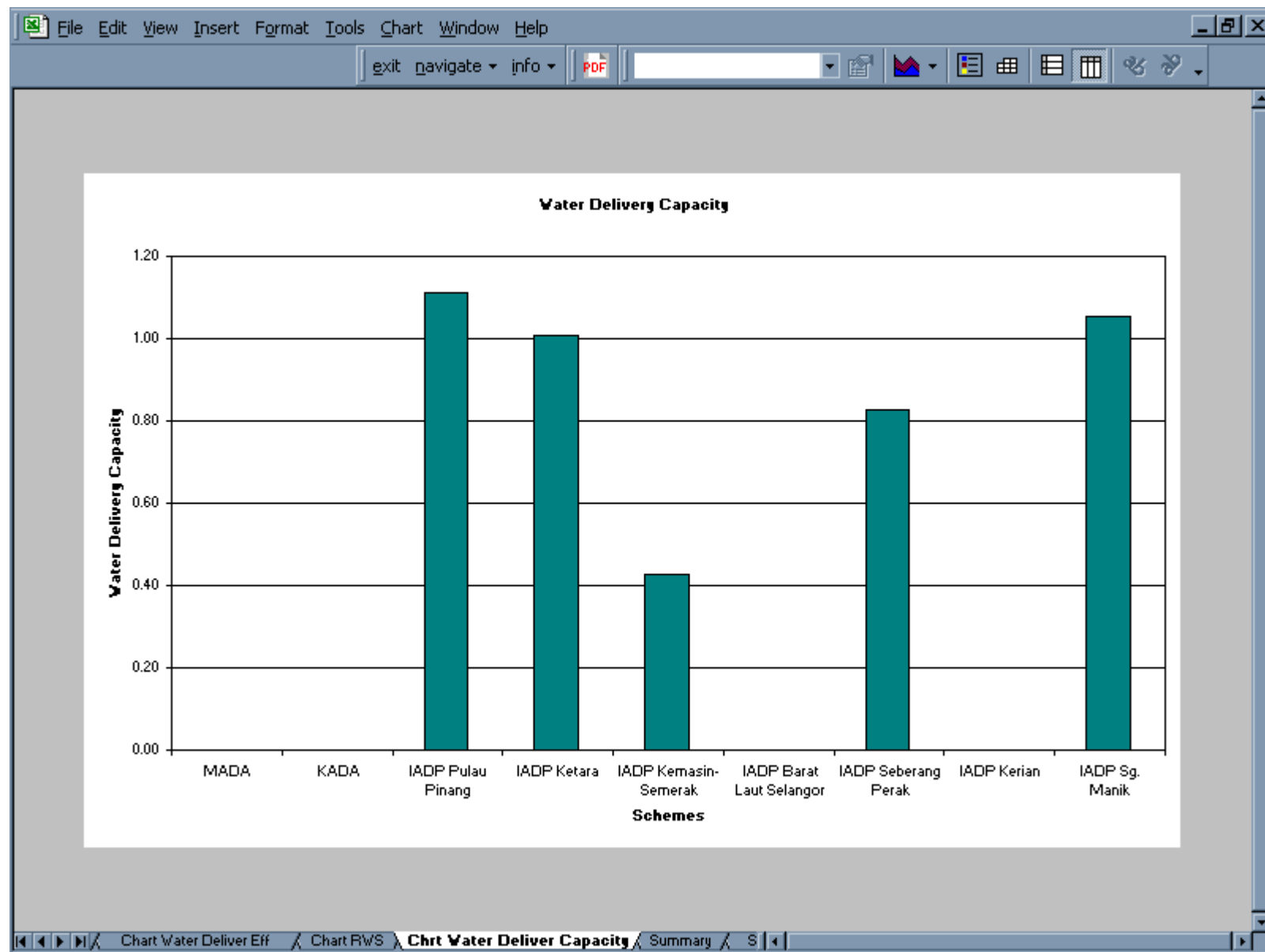
Main System Water Delivery Efficiency



Relative Water Supply



Water Delivery Capacity





BENEFITS

- **Better understanding of the total system parameters and its operation/functions**
- **Meaningful data collection**
- **Real measurable targets for improvement**
- **Real examples of successful systems MOM
(interaction with wider irrigation community)**



PROBLEM AND EXPECTATIONS

- **Data availability**
- **Common understanding of terms and data capture by system operators**
- **Single standard data entry at source**
- **Support needed from all sectors**



CONCLUSION

Interesting

Challenging

Beneficial



Summary of Benchmarking Indicators

[illegible]



System Descriptors

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	A	B	C	D	E	F	G	H
3		Basic descriptors of irrigation and drainage scheme	MADA	KADA	IADP Pulau	IADP	IADP	IADP
4					Pinang	KETARA	Kemasin-Semerak	Barat Laut Selangor
5	Code	Descriptor	Possible options					
6								
7								
8		Location						
9	D1	Country	Malaysia	Malaysia	Malaysia	Malaysia	Malaysia	Malaysia
10	D2	Continent	Asia	Asia	Asia	Asia	Asia	Asia
11	D3	Scheme name	Muda Irrigation Project	Kemubu Irrigation Project	Seberang Perai Irrigation Scheme	Besut Irrigation Scheme Project	Kemasin -Semerak Irrigation Scheme Projek	Tanjung Karang irrigation Scheme
12	D4	Latitude						
13	D5	Longitude						
14		Climate and soils						
15	D6	Climate	Humid tropics	Humid tropics	Humid tropics	Humid tropics	Humid tropics	Humid tropics
16	D7	Average annual rainfall (mm)	2,119	2,647	2,120	2,904	2,589	2,030
17	D8	Average annual reference crop potential evapotranspiration, Et, (mm)	141.8	141.8	158.4	142.2	142.2	131.8
18	D9	Peak daily reference crop potential evatranspiration, Et, (mm)	3.94	3.94	3.9	3.95	3.95	3.66
19	D10	Predominant soil type (s)	coastal marine, clay and alluvial	alluvial soil of riverine origin	coastal alluvial soil	Organic clay soils and alluvial soils	Alluvial soils	Alluvial soil and org soils
20		Institutional						
21	D11	Year first operational	1973	1971	1994	1979	1997	1985
22	D12	Type of management	joint government/ local organization	joint government/ local organization	government agency	Government Agency	Government Agency	Government Agency
23	D13	Agency functions	- Irrigation and drainage service	- Irrigation and drainage service	- Irrigation and drainage service	Irrigation and Drainage service	Irrigation and Drainage service	Irrigation and Drainage service
24			- water resource management	- water resource management				
25			- reservoir management					
26	D14	Type of revenue collection	Nil	Nil	Nil	Nil	Nil	Nil
27	D15	Land ownership	private	private	private	private	private	private
28		Socio-economic						
29	D16	(National) Gross Domestic Product (GDP)	RM 332.65 billion. (US\$ 86.4 billion) ;Year 2001					

SummarySystem descriptorsIrrigation service deliveryFinancial



Irrigation Service Delivery

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	A	B	C	F	G	J	K	L	M
1	Domain	Performance indicator	Data required	IADP Pulau Pinang	IADP KETARA	IADP Seberang Perak	IADP Kerian	IADP Sg. Manik	
2	Service delivery performance	Total annual volume of irrigation water delivery (m ³ /year)	Total daily measured water delivery to water users (m ³)	155.45	186.34	648.25	109.07	400.08	
3		Annual irrigation water delivery per unit command area (m ³ /ha)	Total daily measured water inflow to the irrigation system (m ³)	119.58	147.21	395.43	66.53	152.03	
4			Total command area service by the irrigation system (ha)	9,832	5,174	8,708	23,560	6,054	
5		Annual irrigation water delivery per unit irrigated area (m ³ /ha)	Total daily measured water inflow to the irrigation system (m ³)	119.58	147.21	395.43	66.53	152.03	
6			Total annual irrigated crop area (ha)	19,271	10,141	17,242	43,822	11,260	
7		Main system water delivery efficiency	Total daily measured water delivery to water users (m ³)	155.45	147.21	648.25	109.07	400.08	
8			Total daily measured water inflow to the irrigation system (m ³)	119.58	147.21	395.43	66.53	152.03	
9	Annual relative water supply	Total daily measured water inflow to the irrigation system (m ³)	119.58	147.21	395.43	66.53	152.03		
10		Total daily measured rainfall over irrigated area (m ³)	8.72	135.91	139.59	5.43			
11		Total daily/periodic volume of crop water demand, including percolation losses for rice crops (m ³)	130.28	115.33	243.76	50.41	78.39		
12		Annual relative irrigation supply	Total daily measured water inflow to the irrigation system (m ³)	119.58	147.21	395.43	66.53	152.03	
13	Total daily/periodic volume of irrigation water demand (crop water demand less excluding effective rainfall), including percolation losses for rice crops (m ³)								
14	Water delivery capacity	Current main canal capacity (m ³ /s)	28.2	12.1	17.3	55.7	17.8		
15		Peak month irrigation water demand (m ³ /s)	25.4	12.0	20.9	54.2	17.0		
16	Security of entitlement	System water entitlement							
17									

SummaryScheme descriptorsIrrigation service deliveryFinancial



Thank You