

FIVE BASIC FOUNDATIONS CONCEPT FOR IRRIGATION MODERNIZATION IN INDONESIA

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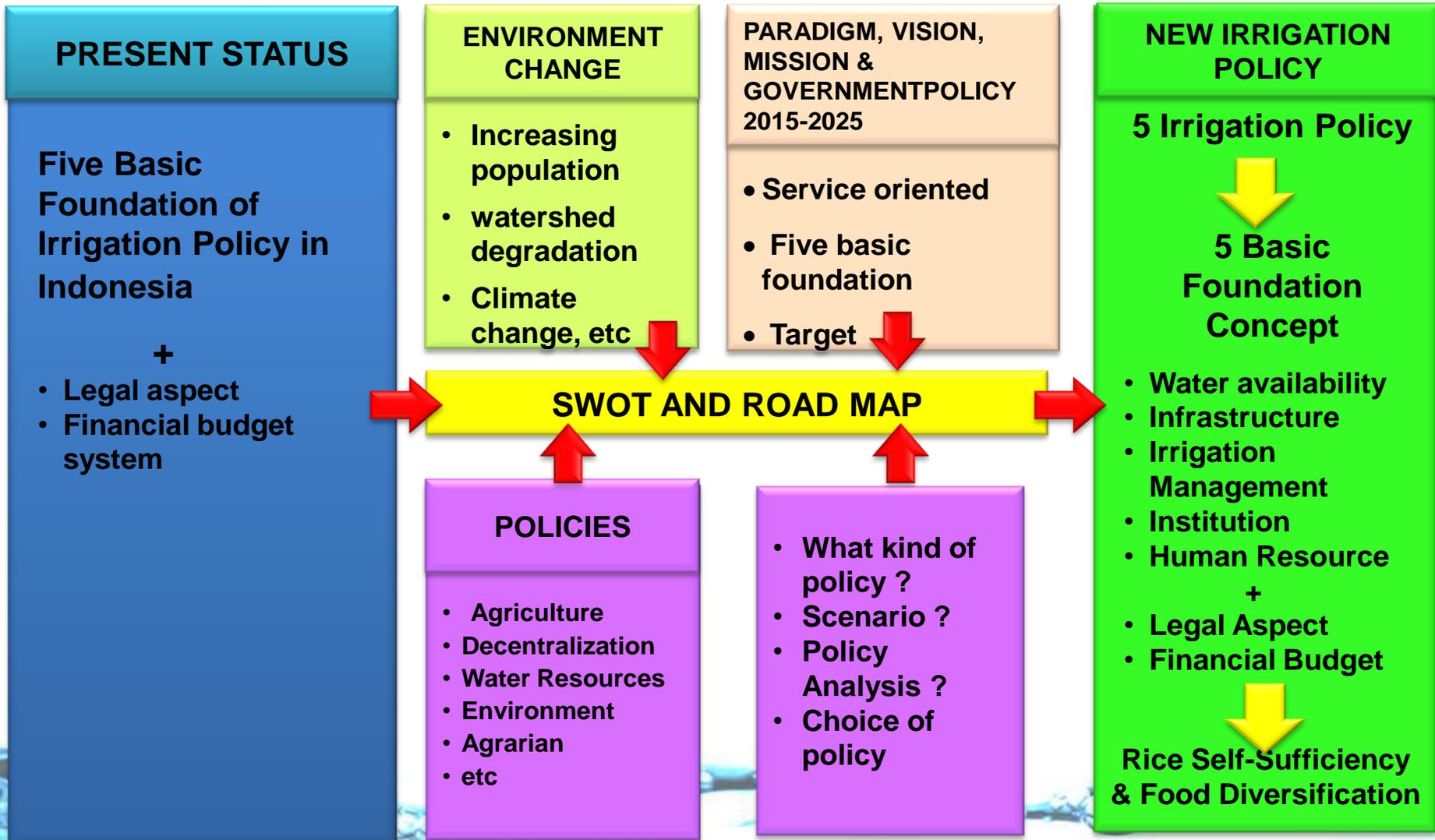
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NEW POLICY OF IRRIGATION IN INDONESIA



TYOLOGY (1)

- Indonesia is located in tropical humid area stretching 5,120 km from east to west and 1,888 km north to south.
- Rainfall pattern varies from more than 3,500 mm/year (some parts of Sumatra, Kalimantan and West Java) to less than 1,750 mm/year such as in East Nusa Tenggara.
- Heavy rainfall and typical geo-hydrological condition lead to establishment of many types of rivers in Indonesia.
- There are about 5,886 main rivers in Indonesia and the run-off-river flow has already been used for irrigation. Exploitation of the river flows depends on the storage of river supplies during rains.
- The Indonesia Government Act No. 7/2004 on Water Resources and the Government Regulation No. 20/2006 on Irrigation stated that:
 - ✓ (i) central government has authority to manage command area $\geq 3,000$ ha;
 - ✓ (ii) provincial government has authority to manage in between 1,000 ha – 3,000 ha; and
 - ✓ (iii) regency government has authority to manage $< 1,000$ ha.

TYOLOGY (2)

- The total area of irrigation system in Indonesia amounted to 7,230,180 ha or 33,210 systems, consist of
 - ✓ 2,315,000 ha (241 systems) of central government authority (32 %);
 - ✓ 1,423,222 ha (1,109 systems) of provincial government authority (20%);
 - ✓ 3,491,961 ha (31,860 systems) of district government authority (48%).
- Among the total numbers of 7.2 milliion hectares almost 50% is located in Java Island and its developed during 1969 – 1984.
- During 1969-1984, seven multiple purposes and river-basin projects were developed namely: the Brantas River Basin Project; the Jratunseluna (Jragung, Tuntang, Serang, Lusi, Juana); Bengawan Solo; Serayu; Citanduy; Citarum; and Jeneberang River Basin Projects.
- The management of Brantas and Citarum River Basins have been transformed into state owned companies, the Jasa Tirta-I for Brantas River Basin Project, and Jasa Tirta-II for the Citarum River Basin Project including Jatiluhur multipurpose dam.



TYOLOGY (3)

- Lesson learned from the 1969 – 1984 Indonesian irrigation developments are:
 - ✓ Unstability of irrigation systems and management because its implementation was over emphasizing on the construction of irrigation infrastructure.
 - ✓ There was lack of participatory approach in the implementation of development and management of irrigation
 - ✓ There was lack of implementation of human development as the basis for community participation.
- Rice is the main food for most Indonesian. But condition of irrigation infrastructure of Indonesia is over their technical lifetime.
- The Government of Indonesia is in process of constructing modernization irrigation concept and strategy since 2009



BACKGROUND

Environment change

- Increasing population
- Water scarcity
- Increasing water competition
- Decreasing watershed performance

- Several physical infrastructure have been deteriorated
- Lack of management service oriented
- Decreasing of condition & functional irrigation systems

- Food consumption increase
- Requirement of irrigation systems: effective, efficient, sustainable

Irrigation
Modernization



DEFINITION OF IRRIGATION MODERNIZATION (1)

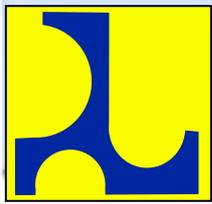
ICID

- The process of improving an existing project to meet new project criteria. It includes changes to the existing facilities operational procedures, management, and institutional aspects. These changes are designed to enhance the the economic and social benefits of the project. Unlike rehabilitation, modernization is not renovation of the project features in need of repair.

FAO

- Modernization irrigation are combined strategy of institutional, managerial and technological change with the objective to change from a supply to service oriented mode of operation. (Hans W. Wolter, 1997)





DEFINITION

INDONESIA

With the objective to attain food security and farmers' prosperity, the modernization of irrigation in Indonesia is define as **process of improving an existing irrigation system to meet better participatory irrigation management services, to be more efficient, effective and sustainable management through developing reliability of five pillars** i.e. Better water availability, good infrastructures, improving irrigation management, institutional strengthening as well as empowerment of human resources



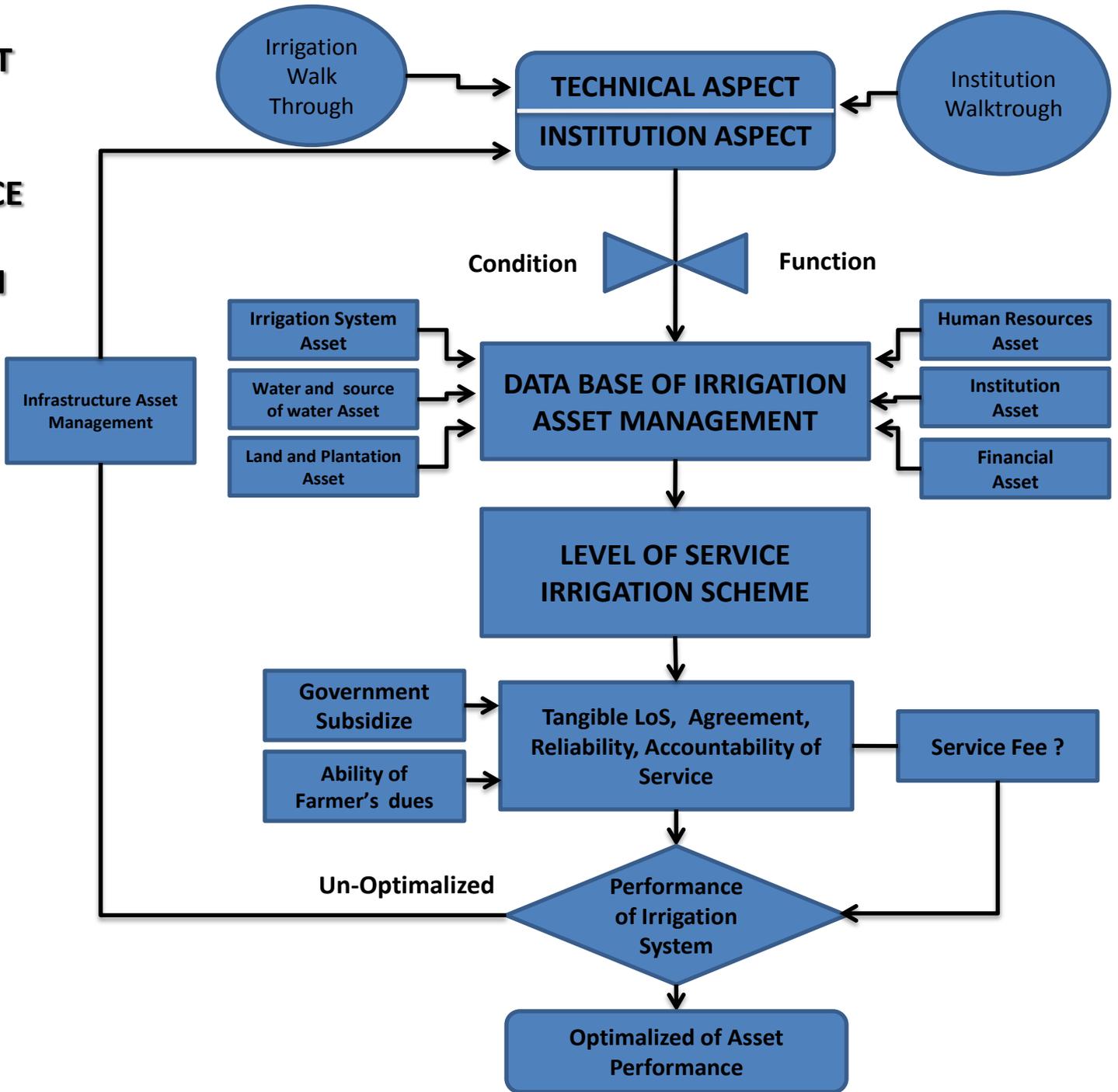
DEFINITION OF IRRIGATION MODERNIZATION (2)

INDONESIA

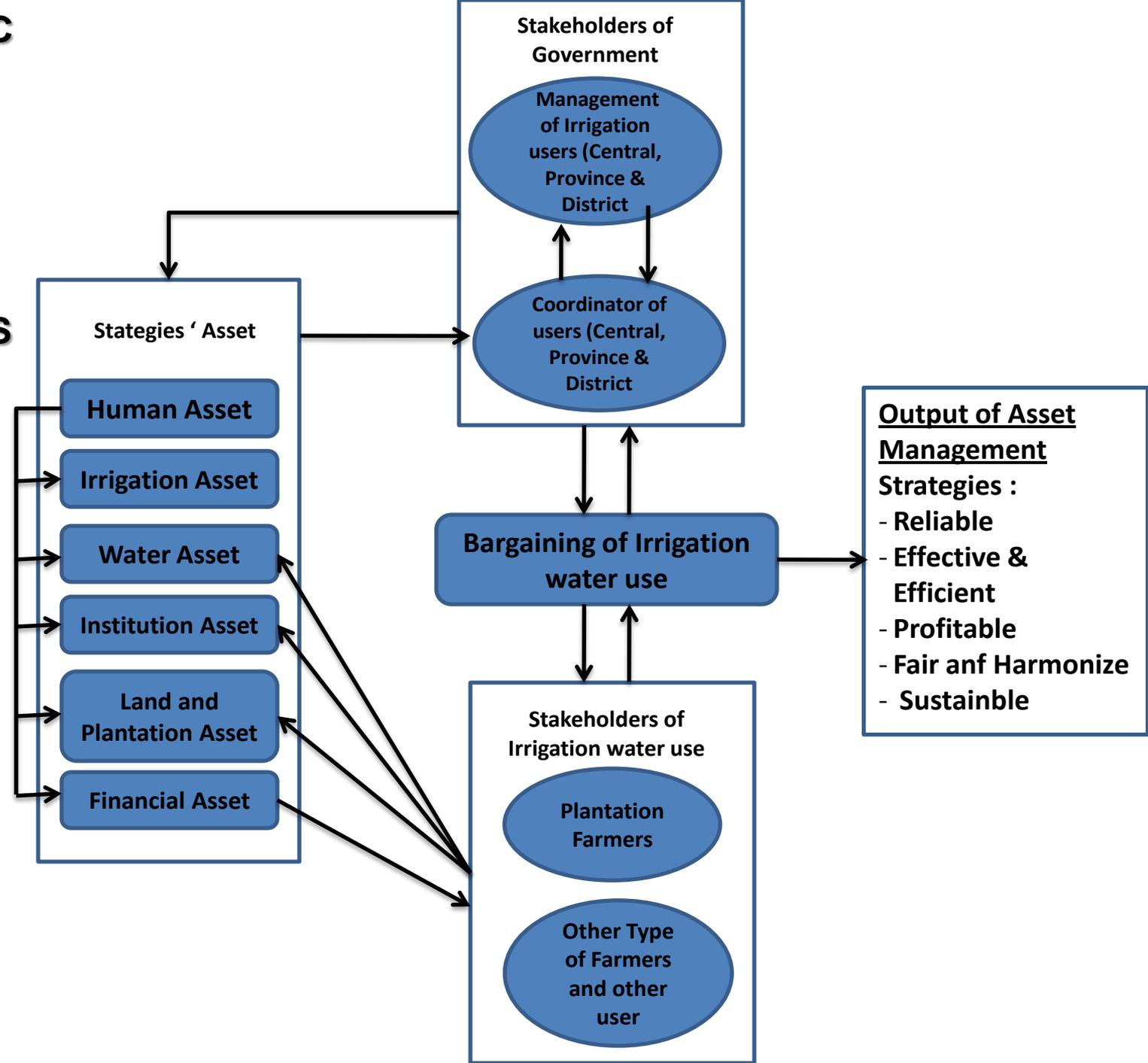
Main Issue	Modernization Components	
	Before	After
Orientation	Supply-oriented, resources based, protective irrigation systems, M&E	Service-oriented, knowledge based, productive irrigation, M&E
Main components	Hardware/infrastructure, M&E	Hardware, software & management (human & institution), M&E
Stepping process	Design, construction, management, development, M&E	On-farm water management & water-use efficiency based on participative transaction service (agronomic-economic-social-cultural aspect), hydrologic-hydraulic-design-construction concept (irrigation & drainage)
Supporting technology	Manual O&M, accurate & easy to handle for O&M data base management systems, resource base management systems, M&E	Automatizing, precise, information technology, Decision Support System (DSS) i.e. prescriptive farming, Knowledge Management System (KMS), M&E

**INFRASTRUCTURE
ASSET MANAGEMENT
ROLE**

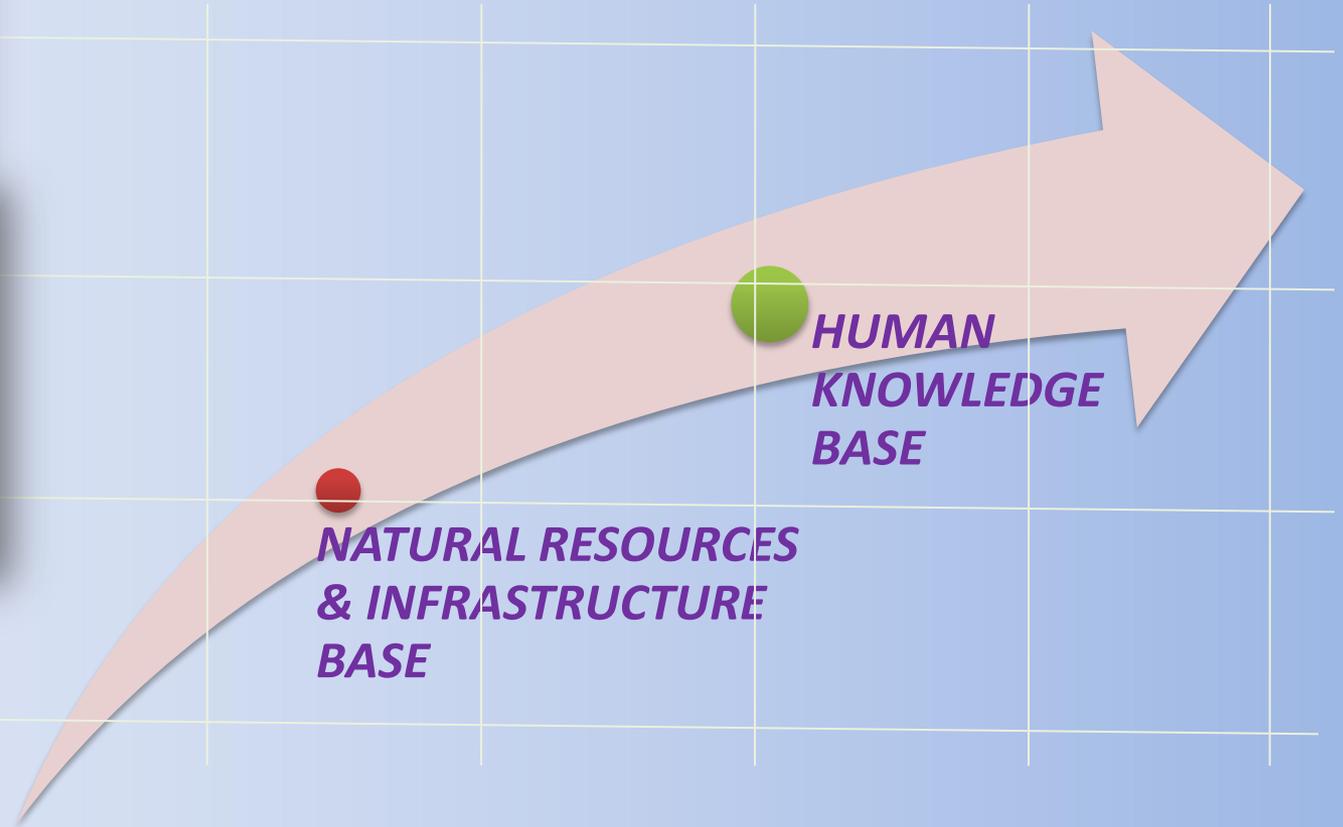
**IN THE PERFORMANCE
OF IRRIGATION OM-
BASED TRANSACTION
SERVICES**



THE STRATEGIC ASSET MANAGEMENT OF O & M OF IRRIGATION SYSTEMS - TRANSACTIONS BASED



CHANGE OF MINDSET



MODERNIZATION OF IRRIGATION IN
INDONESIA DEVELOPMENT SYSTEM

BENEFIT OF MODERNIZATION OF IRRIGATION

NO	BENEFIT ASPECT	GOVERNMENT	WUA's
1	Politic	Water right service guarantee from the government to farmers → efficient, effective, equity, quantity, quality and timeliness, sustain in water resources management	Water right politic guarantee from the government to farmers → efficient, effective, equity, quantity, quality, timeliness and sustain in water resources management
2	Social	As an enabler irrigation institutional to serve irrigation based on farmers public awareness and transaction service	Realizing of social capital between government and farmers on day-to-day basis irrigation management, Increasing motivation on maintaning of irrigation facilities
3	Financial & economic	Realizing irrigation finacial management system based on transaction benefit services Facilitating several irrigation policies to increase multiplier effect on farmers income, social welfare as well as village economic condition	Motivation of willingness to pay from increasing economic on-farm production (irrigaion benefit) based on implementation of management asset and level of service (LoS) Increasing level of farmer income, social welfare

PREMISE

- The Indonesia Government Act No. 7/2004 on Water Resources and the Government Regulation No. 20/2006 on Irrigation stated **5 Basic Foundation Concept to develop irrigation system in Indonesia i.e: Water availability, Infrastructure, Irrigation Management, Institution, Human Resource**
- Implementation of the five basic foundation concept on irrigation modernization in the real on-farm farmer need of ABCDE-F's process (van Hofwegen). The ABCDE-F's process is the following: Accounting, Bargaining, Codification, Delegation, Engineering and Feedback.



VISI : irrigation systems sustainability to achieve food security and farmer welfare
MISI : (1) to develop irrigation system
(2) To manage irrigation system

Environmentally sustain, Participation, *Conjunctive Use*, Upstream-downstream harmonization, On- and off-farm integrated farming system

Water availability

Irrigation infrastructure

Irrigation management

Institutional irrigation management

Human resource (knowledge management base)

5-foundation basic of irrigation modernization in Indonesia

Enabler

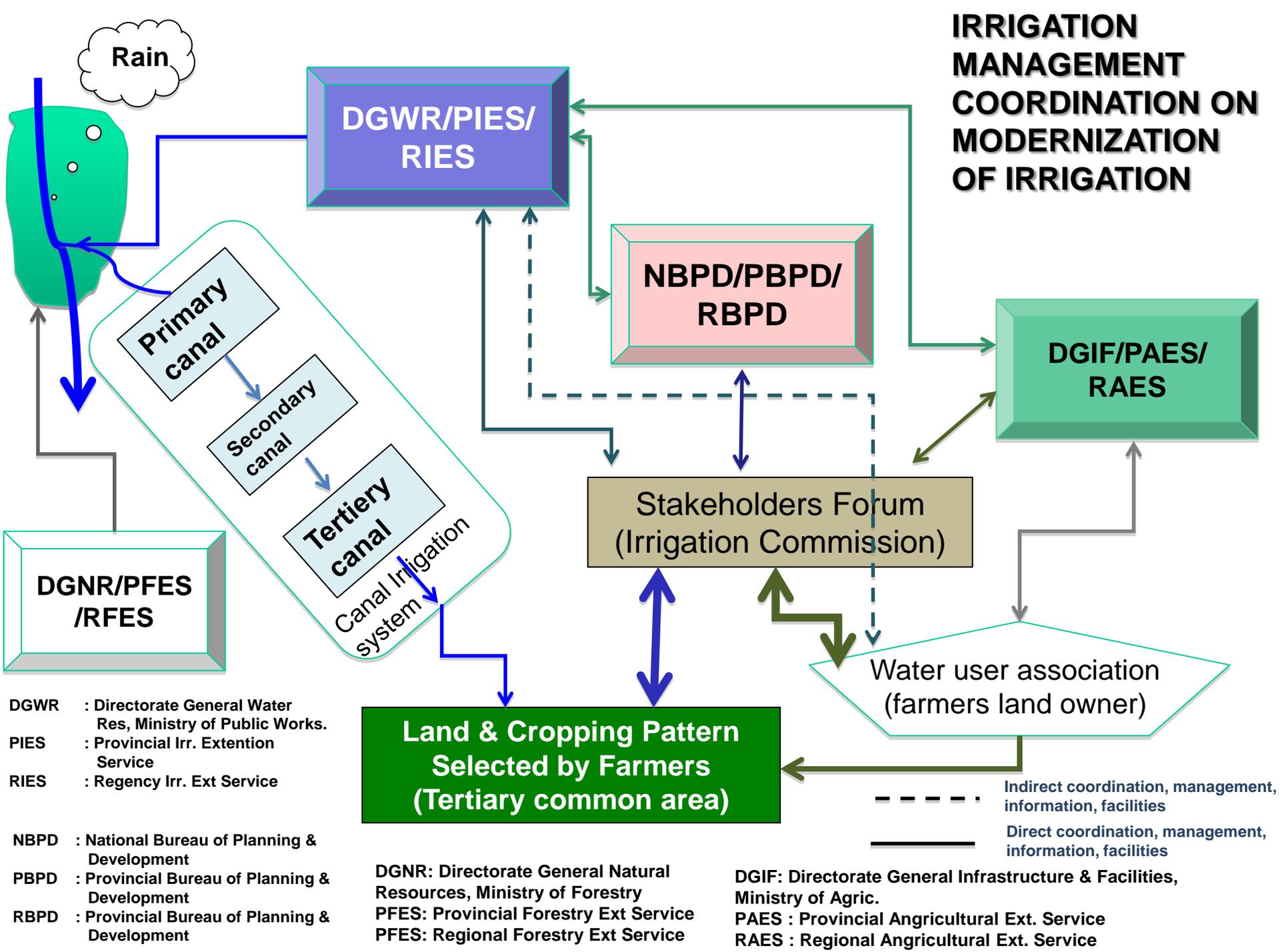
- Government Act Law (Water Resources and Agriculture)
- Government Regulation (Water Resources & Agriculture)
- Provincial & Regency Regulation

Directorate Gen. of Water Resources
 Dir. Gen. of Agric. Infrastructure Facility
 Water Resources Extension Service (Provincial & Regency)
 Irrigation Commission
 WUA's
 Knowledge & Technology

- Irrigation financial politic
- Water resources management information system
- Water right

Framework ABCDE-F

Framework ABCDE-F



5 STEP OF MODERNIZATION

STEP 1

- Preparation & implementing Irrigation Modernization Readiness Index, priority selection at selected irrigation command area will be used as a field irrigation modernization sample

STEP 2

- Consultation Public → Sincronize between government and farmer program

STEP 3

- Good management governance agreement among the stakeholders → *role and risk sharing*

STEP 4

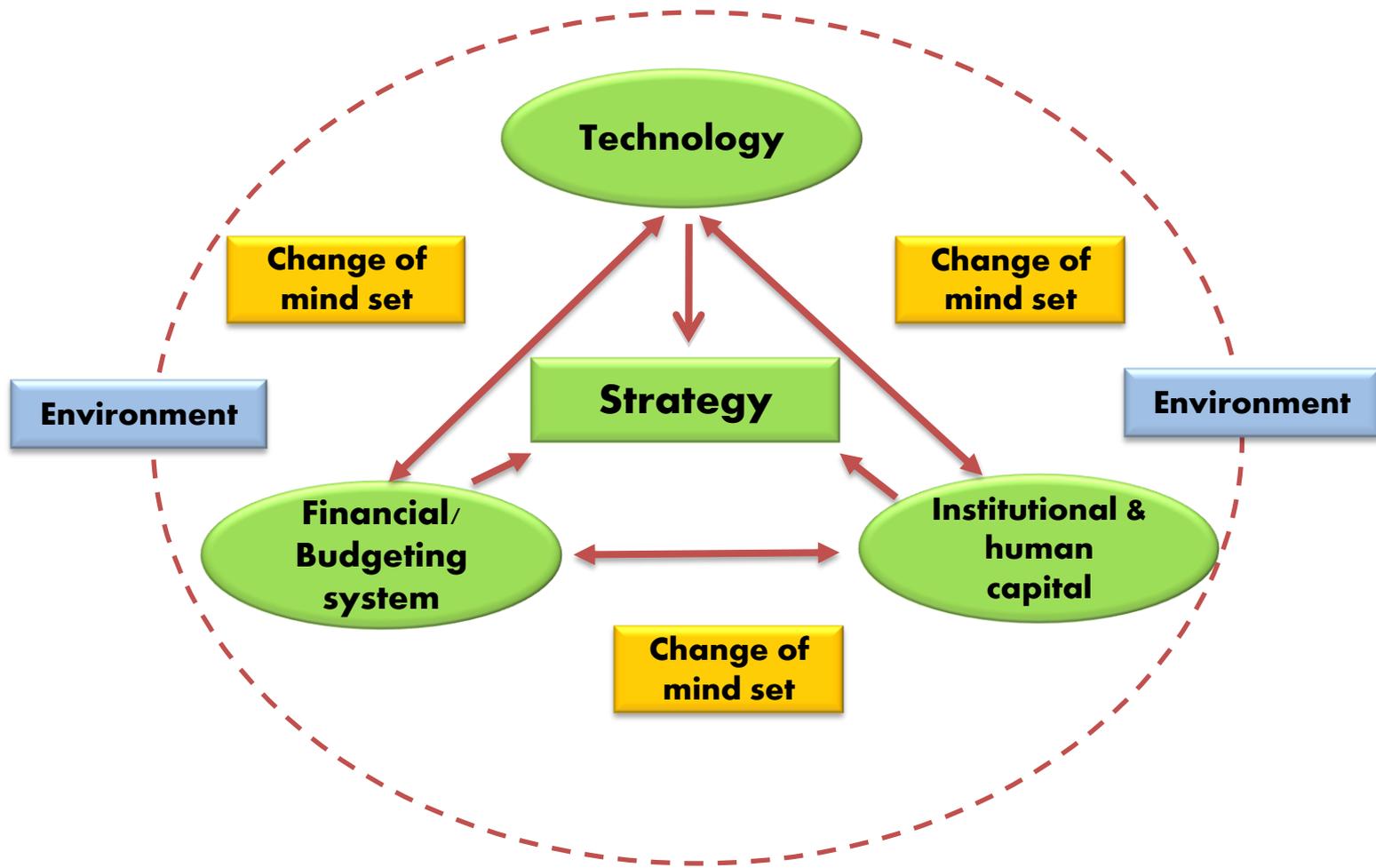
- To develop modernization system planning at irrigation sample command area

STEP 5

- Learning process from the selected irrigation modernization sample command area



3 IMPLEMENTATION DOMAINS OF MODERNIZATION OF IRRIGATION IN INDONESIA



IMPLEMENTATION PROCESS

1

- Selection of the sample irrigation command area (central government authority)

2

- Implementing 5 basic foundation modernization irrigation at the field of sample command area

3

- Learning process
- Bargaining process between irrigation regulator and farmer water user

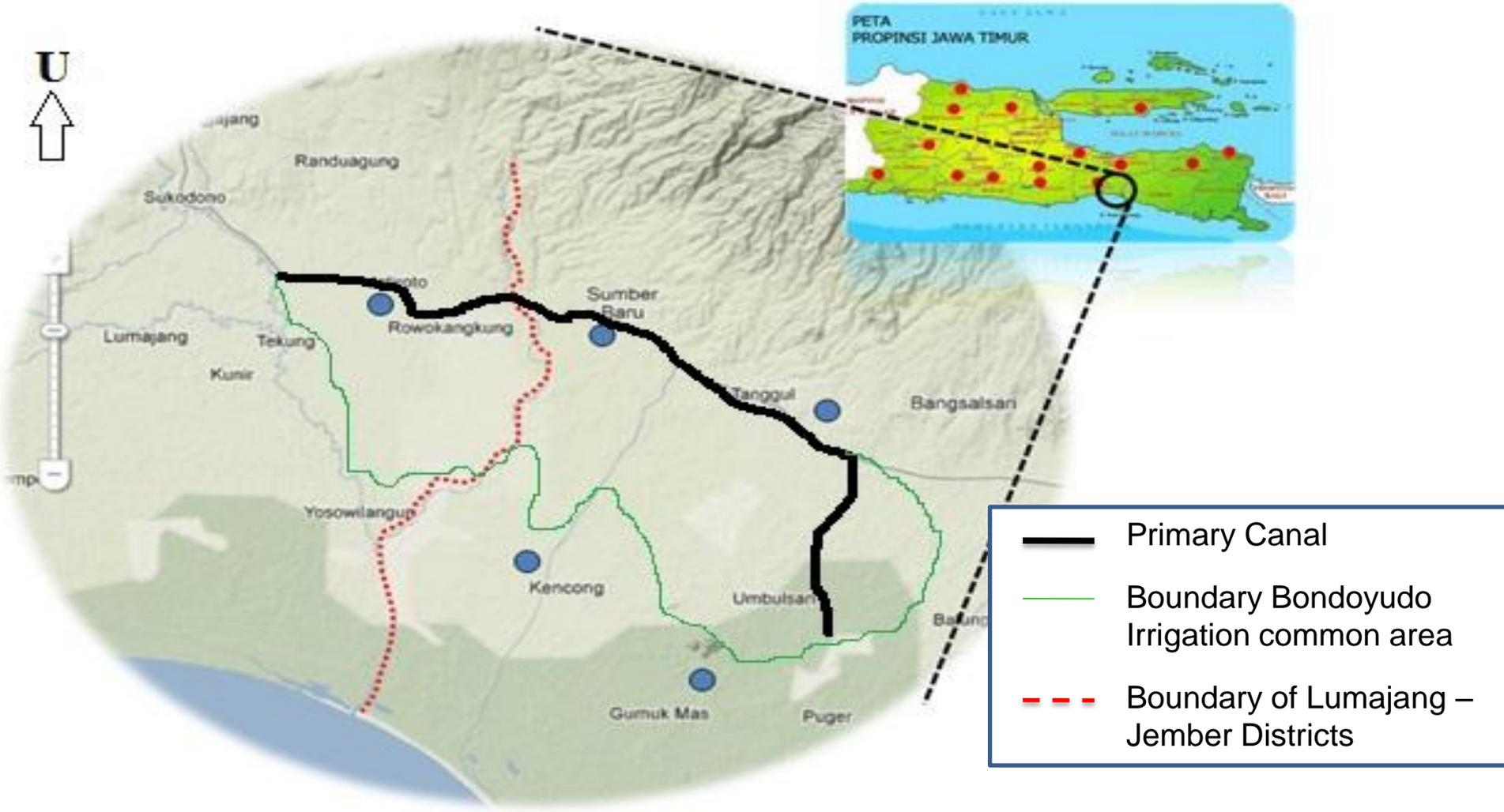
4

- New government policy related to irrigation modernization



SAMPLE OF COUNTRY ASSESSMENT :

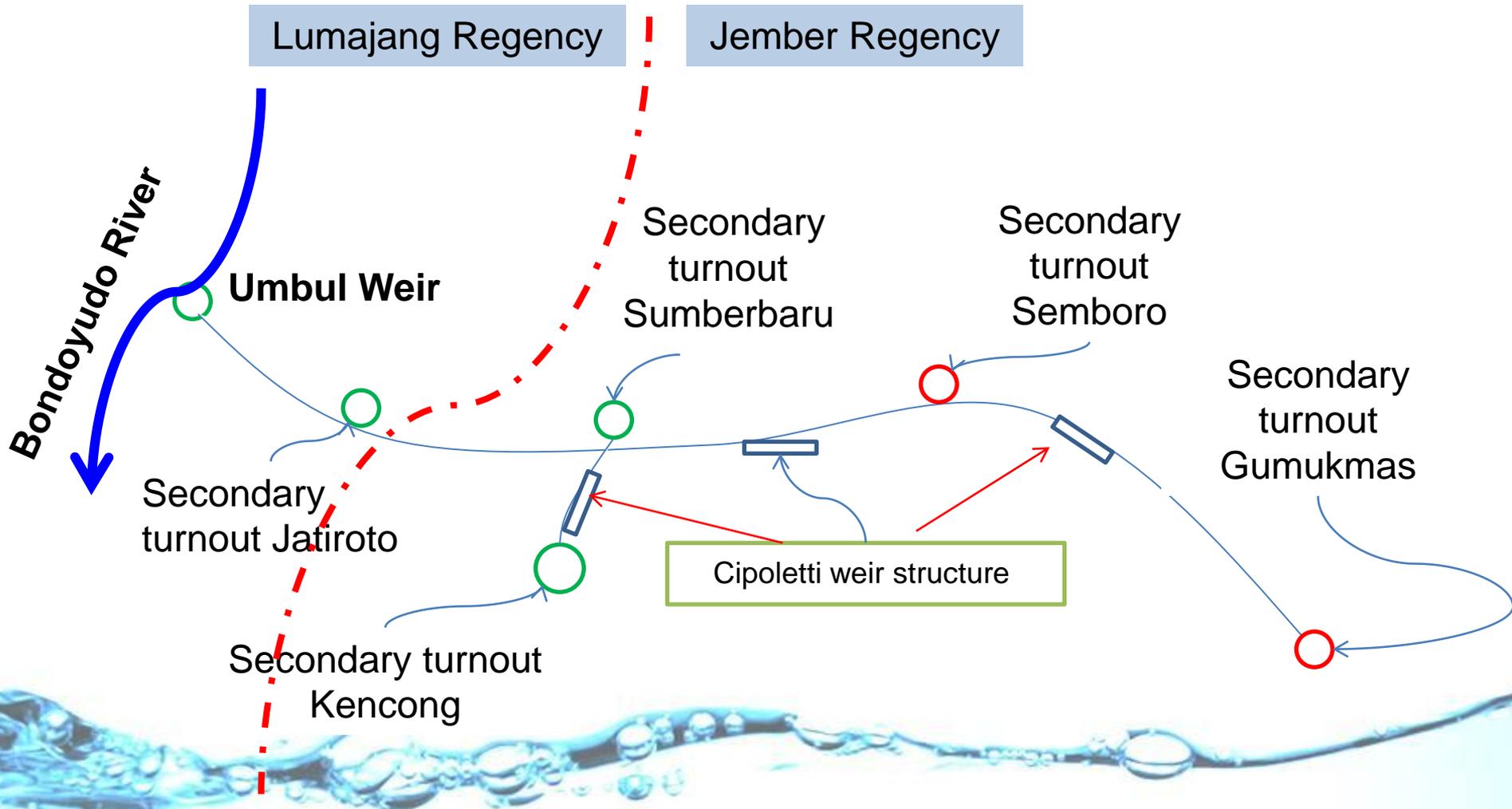
BONDOYUDO IRRIGATION COMMON AREA (1)



SAMPLE OF COUNTRY ASSESSMENT :

BONDOYUDO IRRIGATION COMMON AREA (2)

SCHEMATIC OF BONDOYUDO IRRIGATION SYSTEM AND ITS 5 SUB COMMAND AREAS



SAMPLE OF COUNTRY ASSESSMENT :

BONDOYUDO IRRIGATION COMMON AREA (3)

1. Total area: 11.793 Ha, 27 km length (central government authority since the total area > 3,000 Ha)
2. Brantas River Basin Management System Office is a central government body to manage Bondoyudo Irrigation in East Java
3. Irrigated two regencies area (Lumajang 887 Ha and Jember 10,906)
4. Use of water from Bondoyudo River at Umbul Weir in Lumajang Regency
5. Bondoyudo divided into 5 secondary canal system i.e (i) Jatiroto sub command area (887 Ha); (ii) Sumberbaru (3,721 Ha); (iii) Semboro (4,281 Ha); (iv) Gumukmas (2,139 Ha); (v) Kencong (476 Ha). Jatiroto sub command area is located in Lumajang Regency, while the other of sub command areas are located in Jember Regency
6. The O&M model for the system was developed by establishing discussion forum to achieve agreement among farmers, district governments, provincial governments, and Brantas River Basin Management.



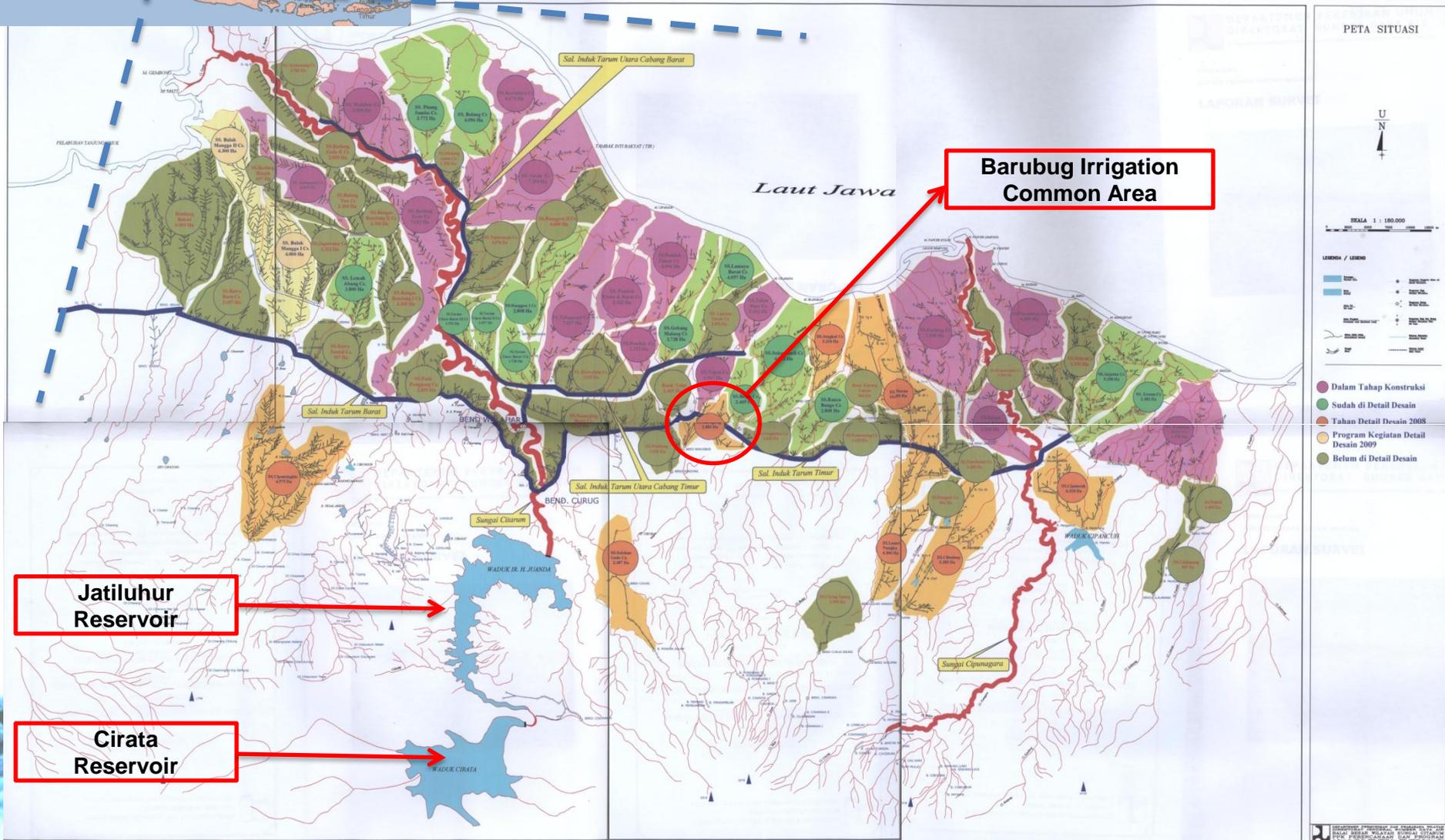
SAMPLE OF COUNTRY ASSESSMENT :

BONDOYUDO IRRIGATION COMMON AREA (4)

7. Farmer institution is a “Ulu-Ulu” traditional water user. The “Ulu-Ulu” is working after receive water order from farmer, however, the amount of water is not precise measure on volumetric basis but its depend on farmer need → inefficient water application
8. Cropping pattern in the upper stream mostly rice-rice-rice (Jatiroto to Sumberbaru secondary irrigation command area), while the rest of downstream area is rice-rice-”palawija” or rice-”palawija”-fallow
9. The Brantas River Basin Management Office since 2011 was setup a computerized water allocation system at each secondary irrigation office to equalized water distribution among the secondary command area from the upper to downstream. The model (water allocation O&M) was built based on dialog among stakeholder and encourage stakeholders participatory.



SAMPLE OF COUNTRY ASSESSMENT : BARUGBUG IRRIGATION COMMON AREA (1)



SAMPLE OF COUNTRY ASSESSMENT :

BARUGBUG IRRIGATION COMMON AREA (2)

1. Total area: 2.889 Ha
2. Source of water is has taken from Cilamaya and Ciherang rivers at Barugbug Weir
3. Average annual flow 660,000,000 m³
4. Water is used for irrigation, domestic, municipality and industries (DMI). Barugbug Irrigation System is a part of Citarum River Basin System and integrated within Jatiluhur Irrigation System in East Tarum Timur canal. East Tarum Main Canal is being operated and maintained by Division III of Jasa Tirta II. Jasa Tirta II Public Corporation as a state owned company that deals with water services.
5. East Tarum main Canal deliver water from Barugbug Weir (Ciherang and Cilamaya rivers), Ciasem River and Cipunegara River with total service area of 102,000 ha.
6. Cropping pattern: rice-rice-rice/horticulture. First group of wet season planting starts on the 1st of October and dry season planting starts on the 1st of April.
7. Since water is relative abundant, therefore, farmer is receiving water by order directly to the irrigation office.



Assessment of BASIC FOUNDATION I :

Ability to provide irrigation water

No	Modernization substances	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1	Water Right	Political right → need of Gov. Reg asap.	Bargaining process among stakeholders	Publishing of Gov Regulation on Water Right	Implementing of Gov. Regulation	Water Resources Management Information Systems (WR-MIS)	Level of participation
	Bondoyudo	Same above	Ulu-Ulu (farmers irrigator) and irrigation official	Same above	Local wisdom	Improvement progress	Simple, beginner
	Barugbug	Same above	Individual farmer and irrigation official	Same above	none	Subject to improve	None
2	<i>Water Supply and Water Saving</i>	In-situ water balance accounting & increasing soil moisture storage	Selected cropping pattern based on real water storage & farmer need	Crop water requirement for spesific area, time and sellected crops	BWS/BBWS	Manual book of cropping pattern and water requiirement for specific area	Application of manual book at on-farm level
	Bondoyudo	Not yet	Not yet	Not yet	Yes	Paddy	Paddy
	Barugbug	Not yet	Not yet	Not yet	Yes	Paddy	Paddy
3	Supply of water	Study on water application for irrigation and other purposes	An agreement among stakeholders based on Gov Act No 7/2004 and Gov Regulation on Water Right	Total amount of water for specific purpose MoU among government and users	BWS/BBWS	Water allocation model for several purposes	Level of implementati on
	Bondoyudo	Irrigation for paddy	At beginning level	Not available	Yes	Not yet	beginner
	Barugbug	Irrigation for paddy	At beginning level	Yes, domestic water	Yes	Not yet	Beginner

Assessment of BASIC FOUNDATION I :

Ability to provide irrigation water

No	Modernization substances	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
4	Watershed protection	Inventory, identify & improve watershed potential capacity on water resources availability	Coordination amongst the water administrator, users and other stakeholders has to be done effectively	Gov Act No 7/2004 (water resources), Gov Act No 12/2007 (watershed protection), agrarian reform, etc	National Water Res Council, Prov Basin Water Management Committee, River Basin Executive Water Manag Committee	Watershed asset management, mapping of land utilization,	Performance of water resources potential at the catchment area
	Bondoyudo	Yes, beginner level	Yes	Available	Yes	Not yet	Not really measured
	Barugbug	Yes, beginning level	Yes	Available	Yes	Not yet	Not really measured



Assessment of BASIC FOUNDATION II: Irrigation Infrastructure

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1.	Dam/Reservoir/Field storage/	Inventory and identify of the potential, condition, function, amount and location	Feasibility study, intensive meeting among water regulator and users	Survey, investigation, design, construction, O&M	River Basin Management Office (BBWS)	DED and construction	M&E
	Bondoyudo	Yes, asset management (2006)	Yes, "Ulu-Ulu", local key person and irrigation regulator	As a standard procedure to follow up asset management	Representative of central government	Standard procedure	Yes
	Barugbug	Not yet	Occasionally	Standard procedure	Representative of central government	Standard procedure	Yes
2	Weir/irrigation main structure	Inventory and identify of the potential, condition, function, amount and density	Feasibility study, intensive meeting among water regulator & users	Survey, investigation, design, construction, O&M	River Basin Management Office (BBWS)	DED and construction	M&E
	Bondoyudo	Yes, asset management (2006)	Yes, "Ulu-Ulu" local key person and irrigation regulator	Standard procedure to follow up asset management	Representative of central government	Standard procedure	Yes
	Barugbug	Not yet	Not necessarily	Standard procedure	Representative of central government	Standard procedure	Yes



Assessment of BASIC FOUNDATION II: Irrigation Infrastructure

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
3	Canal conveyance and drainage structures	Inventory and identify of the potential, condition, function, amount and density	Feasibility study, bargaining on role, risk sharing and farmer water users participation	An agreement (MoU) between water regulator and farmer water user association	BBWS, Agric Extention Service, Water User Association	Management and Development of Irrigation Infrastructure	M&E
	Bondoyudo	Yes, asset management (2006)	Yes, "Ulu-Ulu" local key person and irrigation regulator	Standard procedure to follow up asset management	Representative of central government	Standard procedure	Yes
	Barugbug	Not yet	Not necessarily	Standard procedure	Representative of central government	Standard procedure	Yes
4	Measuring Device Structure	Inventory and identify of the potential, condition, function, amount and density	Feasibility study, intensive meeting among water regulator & users, water users participation	Review and Reediting Manual Book of Design	Directorate Irrigation & Swamp, Center for Research & Development of Water Resources	Improvement of measuring device structure and intensive calbration	M&E
	Bondoyudo	Yes, asset management (2006)	Yes, "Ulu-Ulu" local key person and irrigation regulator	Standard procedure to follow up asset management	Representative of central government	Standard procedure	Yes
	Barugbug	Not yet	Not necessarily	Standard procedure	Representative of central government	Standard procedure	Yes

Assessment of BASIC FOUNDATION III: Irrigation Management

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1	Crop Water Requirement	Type & variety, evapotranspiration, seepage & percolation, effective rainfall, permanent wilting point, field capacity	Water allocation transaction between cropping pattern planning and environment condition	Detail & regional cropping pattern planning (provincial/district decree, etc)	Water regulator, water user association, agric extention service	Crop water req. Model, Water Resources Management Information System (WRMIS)	Increasing water use efficiency and crop production
	Bondoyudo	Not yet	Early process	Early process, rice crop	On going process	Simple WRMIS	Expected, on going process
	Barugbug	Not yet	Not yet	Not yet	Personal (farmer & regulator)	Simple WRMIS	Not yet
2	Water allocation & distribution schedule	Calculation of regular water allocation based on crop water requirement. Water allocation & distribution schedule at 1 – 3 days interval	Water allocation transaction between cropping pattern planning and environment condition	Manual book of O&M	Modernization Irrigation Unit at command area	Water allocation & distribution model, WRMIS	Improving water allocation
	Bondoyudo	Early process implementation	Early process	On going process	On going develop	Early develop & implemented	Yes
	Barugbug	Simple calculation	Not yet	Not yet	Not yet	Not yet	Not yet

Assessment of BASIC FOUNDATION III: Irrigation Management

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
3	Water Lossess	Estimation of water losses and irrigation efficiency	Consistency & continuity implementation of O&M	Manual book of O&M	Water regulator, water user association, agric. extension service	Asset Management, WRMIS, rehabilitation	Reduce of water loss
	Bondoyudo	On going process	Yes	On going process	Yes, Ulu-Ulu	Early develop & implemented	Yes
	Barugbug	Simple estimation	Not yet	Not yet	Not yet	Not yet	Not yet
4	Water management at tertiary farmer level	Water allocation budget based on environmental condition. Scheduled at 1 – 3 days interval	Water allocation transaction between cropping pattern planning and environment condition, irrigation practice	Manual book of water management at tertiary level	Water regulator, water user association, agric .extention service	<i>Crop water req. Model</i> , WRMIS	Level of Satisfy among user
	Bondoyudo	On going process	On going process	On going process	Yes, Ulu-Ulu & regulator	Early developed	Early process
	Barugbug	Simple process	Not yet	Not yet	Not yet	Not yet	Not yet

Assessment of BASIC FOUNDATION IV: Institutional Irrigation Management

No	MEDERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1	Modern Irrigation Management Unit (MIMU), Irrigation Committee, River Basin Water Management Com	Institutional performance	Synergistic and commitment among irrigation system stakeholders	Gov Act No 7/2004 (Water Resources), Gov Regulation No 20/2006 (Irrigation)	DGWR, DGIF, WUA, Governor, Head of Regency, etc	Bureaucratic structure, work load analysis, WRMIS,	Work performance
	Bondoyudo	Fair	Early process	yes	Yes	Early step process	Fair
	Barugbug	None\	Individual (farmer & regulator)	Yes	Yes	Not yet	Poor
2	Design & Knowledge Management Center	Institutional performance	Commitment & consistent on sharing knowledge and experiences	Organizational lesson learn	DGWR, DGIF, WUA, Governor, Head of Regency, etc	To develop knowledge management system, WRMIS	Level of knowledge management
	Bondoyudo	Fair	Fair	Poor	Yes	Early process	Fair
	Barugbug	Poor	Poor	Poor	Yes	Not yet	Poor
3	Irrigation/Agriculture Extension Service (Irrigation and Agriculture Empowerment Unit)	Institutional performance & competent	Commitment to empowering water user association	Establishment of empowering system unit	DGWR, DGIF, WUA, Governor, Head of Regency, etc	Develop of empowerment & guidance system, WRMIS	Improving of farmer knowledge
	Bondoyudo	Fair	Fairr	Fair	Yes	Fair	Fair
	Barugbug	Poor	Poor	Poor	Yes	Poor	Poor

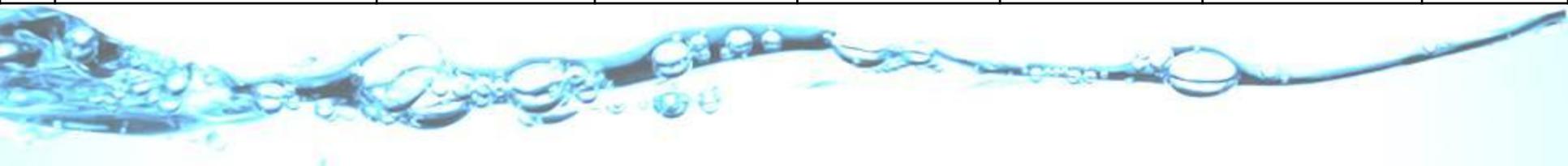
Assessment of BASIC FOUNDATION IV: Institutional Irrigation Management

No	MEDERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
4	Irrigation Guard	Minimum standard security analysis	-	Letter of order from Head of Regency	DGWR, DGIF, WUA, Governor, Head of Regency, etc	Special training on law enforcement	Level of ability
	Bondoyudo	None	-	None	Yes	None	None
	Barugbug	None	-	None	Yes	None	None
5	Mobile Irrigation Service unit	Personnel need analysis	-	Letter of order from Head of Regency	DGWR, DGIF, WUA, Governor, Head of Regency, etc	Special training workshops	Level of service
	Bondoyudo	None	-	None	None	None	None
	Barugbug	None	-	None	None	None	None
6	Water User Associations	Empowerment analysis	Commitment to water user	Manual book	DGWR, DGIF, WUA, Governor, Head of Regency, etc	Empowerment activity	Level of performance on O&M



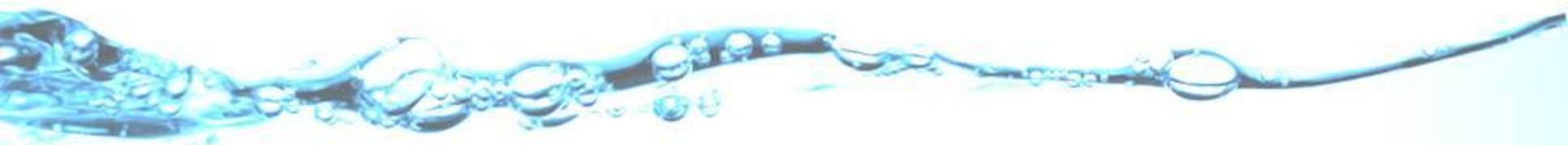
Assessment BASIC FOUNDATION V : Human Capital

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1	Official rank & status	Level of urgent & credit point	-	Letter of order	Min. of Administration Reform and Bureaucratic Reform, DGWR, Governor, Head of Regency	Improvement individual ability (individual learner)	Level of individual ability
	Bondoyudo	Not available yet	-	Not available yet	Not available yet	Not available yet	Not yet
	Barugbug	Not available yet	-	Not available yet	Not available yet	Not available yet	Not yet
2	Training, brevet certification, competency	Specialization of individual skill (technical & managerial)	Survey of Need of Training	Letter of order, brevet, certification	Min. of Administration Reform and Bureaucratic Reform, DGWR, Governor, Head of Regency	Improvement individual ability (individual learner)	Degree status
	Bondoyudo	Non regular training	Central Gov	Central Gov	Yes	Central Gov	Average → fair
	Barugbug	Non regular	Central Gov	Central Gov	Yes	Central Gov	Average → fair



Assessment BASIC FOUNDATION V : Human Capital

No	MODERNIZATION SUBSTANCES	MODERNIZATION PROCESS					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
3	Recruitment system & Merit System Planning (amount, competence & distribution)	Need (threshold mass) analysis	Political will and awareness	Recruitment Regulation	Min. of Administration Reform and Bureaucratic Reform, DGWR, Governor, Head of Regency	Recruitment system based on need and competence	Number of employ competence
	Bondoyudo	Central Gov.	Central Gov	Yes	Yes	Central Gov.	
	Barugbug	Central Gov	Central Gov	Yes	Yes	Central Gov	
4	Incentive system	Work performance analysis	Political will and awareness	Award certification	Min. of Administration Reform and Bureaucratic Reform, DGWR, Governor, Head of Regency	Water production and reduce of conflict	Harmonization among stakeholders
	Baondoyudo	Yes, Central Gov	Central Gov	Less	Yes	Medium	Fair
	Barugbug	Central Gov	Central Gov	Less	Yes	Poor	Poor



Temporary Conclusions

1. Modernization of Irrigation is able to be implemented in Indonesia by staging and selectively without leaving Local Wisdom
2. ABCDE-F Theory is applicable as shown in sample of country assesment
3. Concept modernization of Irrigation in Indonesia is defined as a new management of irrigation water efficiency and to improve Level of Service, from supply-oriented to demand/service oriented by implementing 5 foundations in ABCDE-F Process





Maraming Salamat

THANK YOU

TERIMA KASIH

