Table of Contents

PREFACE		
1	TRACING BACK A RIVER	1
	Persistency	1
	Technological regimes	3
	Structuration	5
	This book	6
2	A JUGGLING ACT	9
	Britsh India	9
	British colonial irrigation design	11
	Productive and protective irrigation	13
	Dutch colonial irrigation on Java	15
	Admiring the pioneers	16
	The Bureau of Public Works	17
	It is not all gold that shines	18
	British colonial irrigation in Africa	19
	The Gezira Irrigation System, British Sudan, 1900 – 1949	19
	A tripartite partnership with two main partners	22
	The Office du Niger, French Sudan, 1920 – 1964	23
	Cotton or cereals	25
	The irrigation factories of French Northern Africa, 1930 – 1956	27
	Californication	28
	Materializing a vision	29
	Colonial Production Regimes	30
3	IMPRESSING THE GERMANS	33
	Irrigation policies in the Netherlands East Indies	34
	Early discussions	36
	Value of irrigation water	38
	Experimenting	40
	The debate on the Pategoean experiment	44
	And the winner is Pemali!	47
	Water regulation in practice	50
	The legal status of irrigation regulations	56
	Another Commission	58
	Closure in water regulation	60

4	ONE EQUATION WITH MANY VARIABLES	62
	Night storage reservoirs	65
	A passage to India	67
	No proof of the pudding	70
	Water measurement and discharge on Java	72
	Romijn or Verwoerd weir?	77
	Closure	81 82
	Linking policies, regulations and measurement	02
5	A COHERENT ORGANISM	85
	Niggling	87
	"Eigen Beheer" and the Pamenoekan and Tjiassem Lands	88
	Irrigation standards in the Netherlands East Indies	91
	Design procedures in the Pemali system	95
	Water availability and water needs	99
	Designing a proper layout	102
6	OUR CALCULATIONS ARE APPROXIMATIONS	107
	Everything you always wanted to know about capacity curves	108
	The Tjipoenegara capacity curve	110
	Irrigation canal dimensions	112
	Canal formulas	115
	Strickler enters the stage	120
	Design of river works and drainage canals	123
	Design decisions and procedures	127
7	RULES IN RETROSPECT	131
	Colonization efforts in Lampung, Sumatra	132
	Irrigation and colonization	136
	Design of Lampung irrigation	138
	Transmigration in Indonesia	142
	Irrigation in transmigration projects in Lampung	144
	Water management structures in Punggur Utara	146
	Indonesian Irrigation Design Standards	152
8	I WANT TO BECOME AN ENGINEER	159
	Education and working environment in the East	159
	Specific attention for the East Indian engineering reality	162
	Bringing education to practice	166
	Technical education at Bandoeng Polytechnic	168
	Post-colonial Dutch irrigation education	171
	Study material in civil engineering irrigation education	175

	Prescriptions	183
9	TECHNICAL CONSTRUCTION OF SOCIETY	185
	The irrigation regime of the Netherlands East Indies	185
	Understanding regime shifts	187
	Understanding regime continuity: phases	188
	A colonial mission: the type of regime	191
	Regime components: decisions and guidelines	193
	From regime to frame: continuity after 1942	194
	Final remarks: understanding regimes and design	195
REFERENCES		197
NOTES		207
INDEX		235