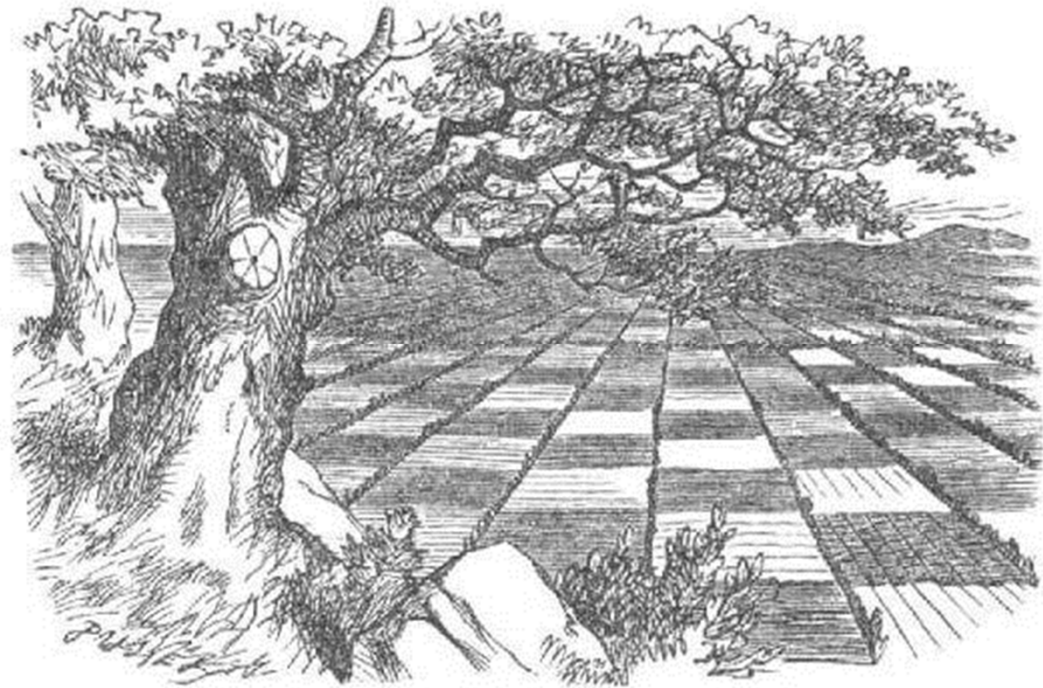


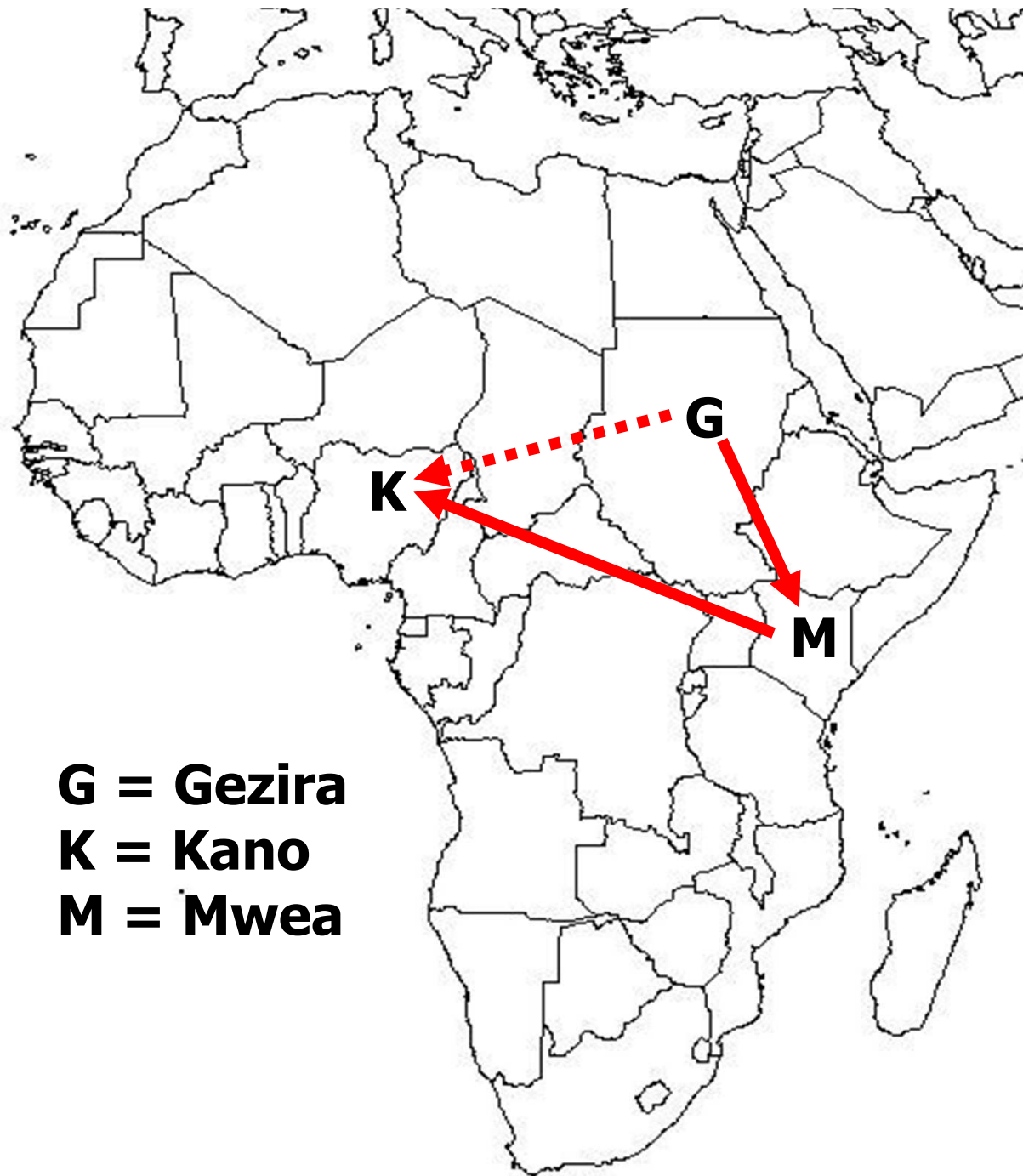
CONTROLLING THE FARMER

IRRIGATION ENCOUNTERS IN KANO, NIGERIA



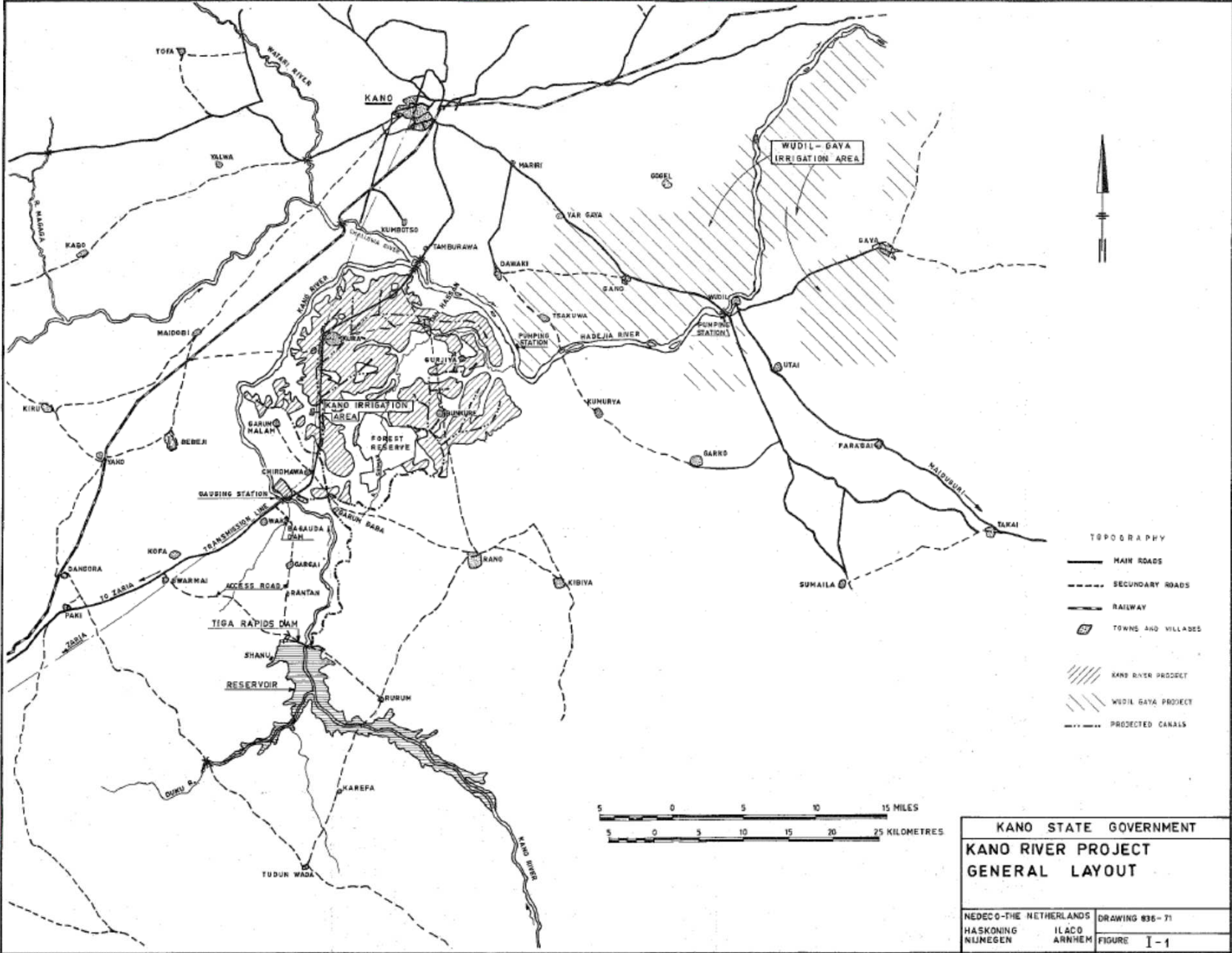
“I declare it’s marked out just like a large chess-board!” Alice said at last. “There ought to be some men moving about somewhere – and so there are!” she added in a tone of delight, and her heart began to beat quickly with excitement as she went on. “It’s a great huge game of chess that’s being played – all over the world – if this is the world at all, you know. Oh, what fun it is! How I wish I was one of them! I wouldn’t mind being a Pawn, if only I might join – though of course I should like to be a Queen, best.”
(Lewis Carroll “Through the looking glass”, quote taken from The complete illustrated works of Lewis Carroll 1993, Chancellor Press; p142-143)

A tale of three projects



G = Gezira
K = Kano
M = Mwea

The Kano River Project, Nigeria



Control in the KRP

Tenant farmers should be selected for their working ability and their "*calculated capacity to adapt the severe discipline of two crops per year irrigation farming*"

Therefore the Dutch consultant suggested building an organization "*to have the farmers advised and guided in all phases of production*"

Because ...

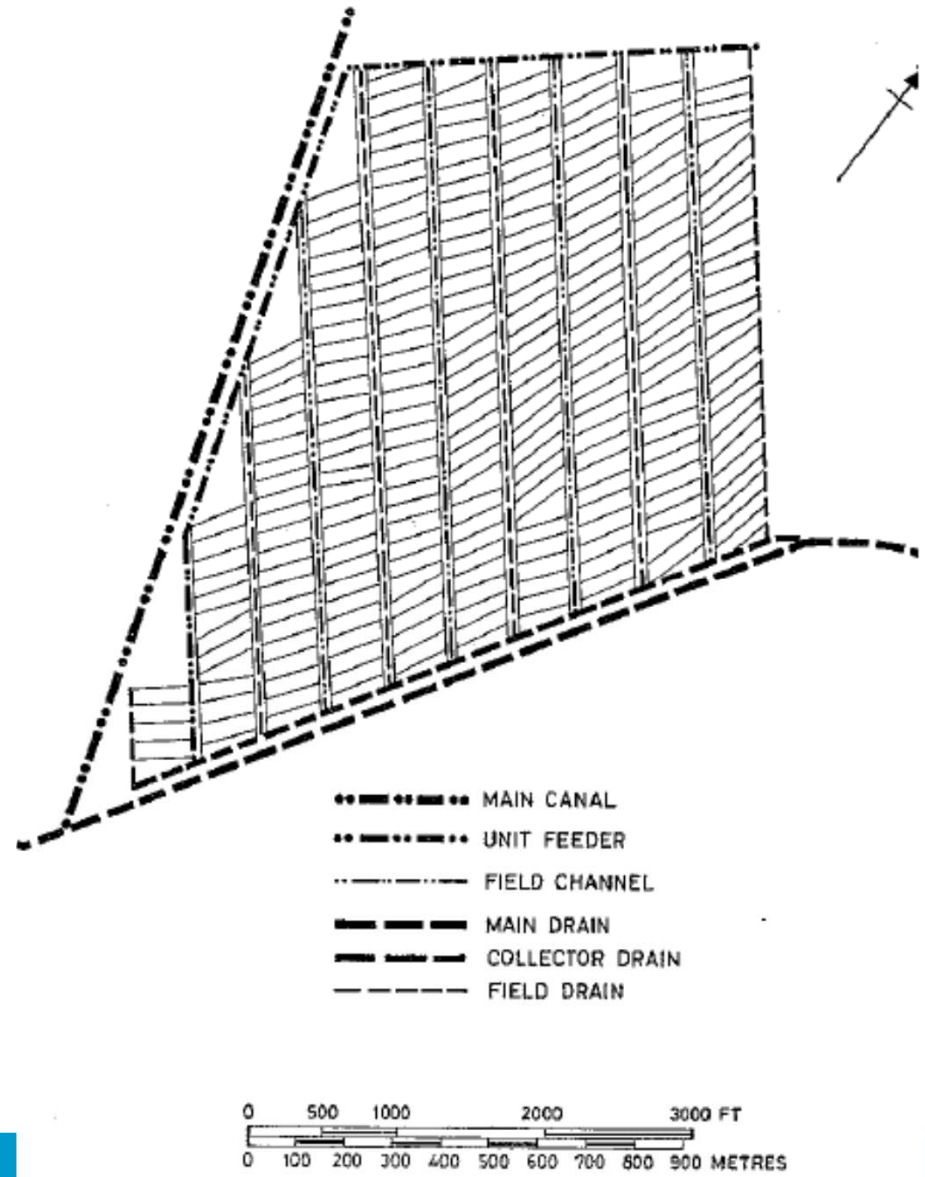
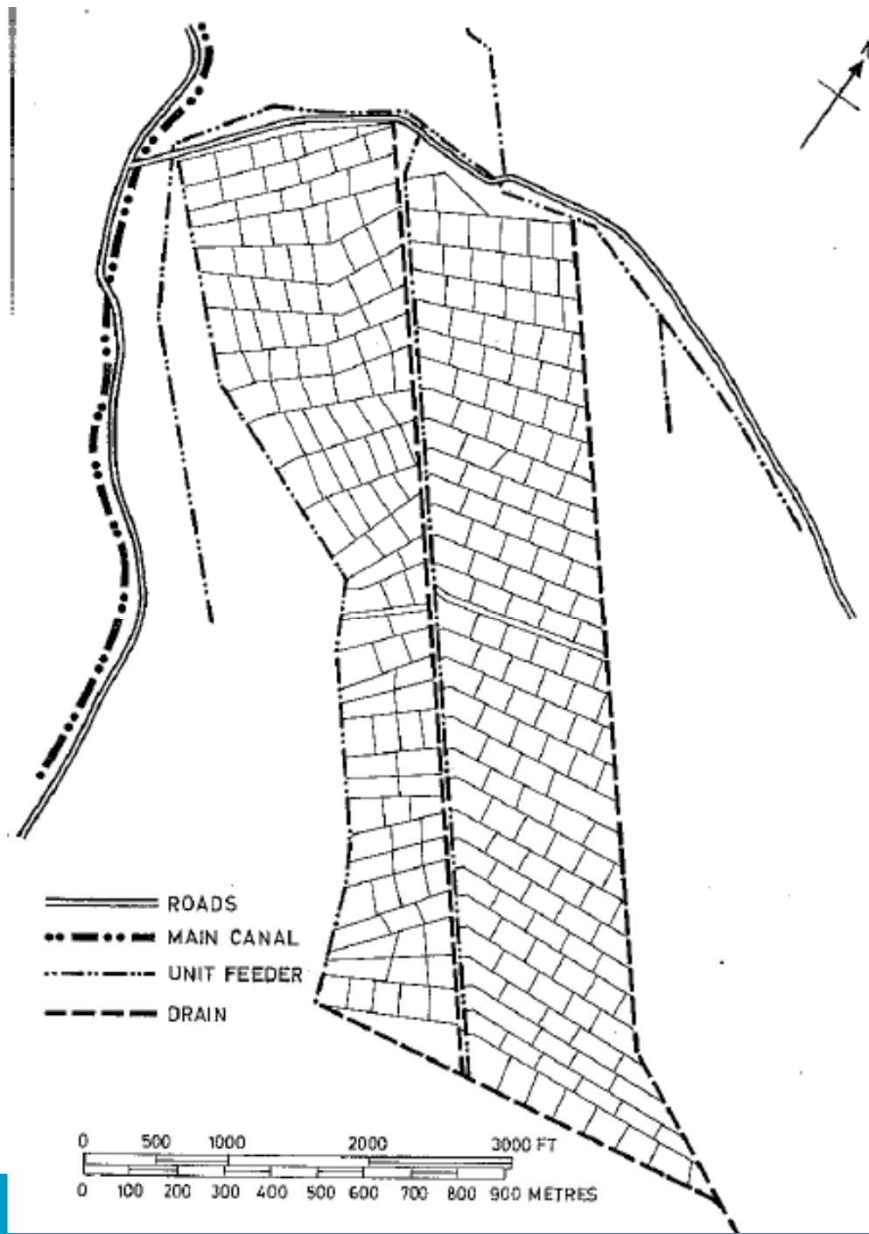
*" The complexity and the scope of the project on the one hand and the scarcity of skilled and experienced manpower on the other call for a **centralized type of project management**, whereby all decisions on water control, water distribution, and most of those on agricultural aspects (cultivation practices, plant protection, fertilizing etc.) are to be **taken or initiated by the project management**, at least in the initial years."*

Inheritance 1: Mwea, Kenya



Plate 1. Irrigated paddy fields at Mwea from the air. Note the water control system, with the feeder channels running down the and the drains along the outside next to the roads. Nurseries are visible in the foreground.



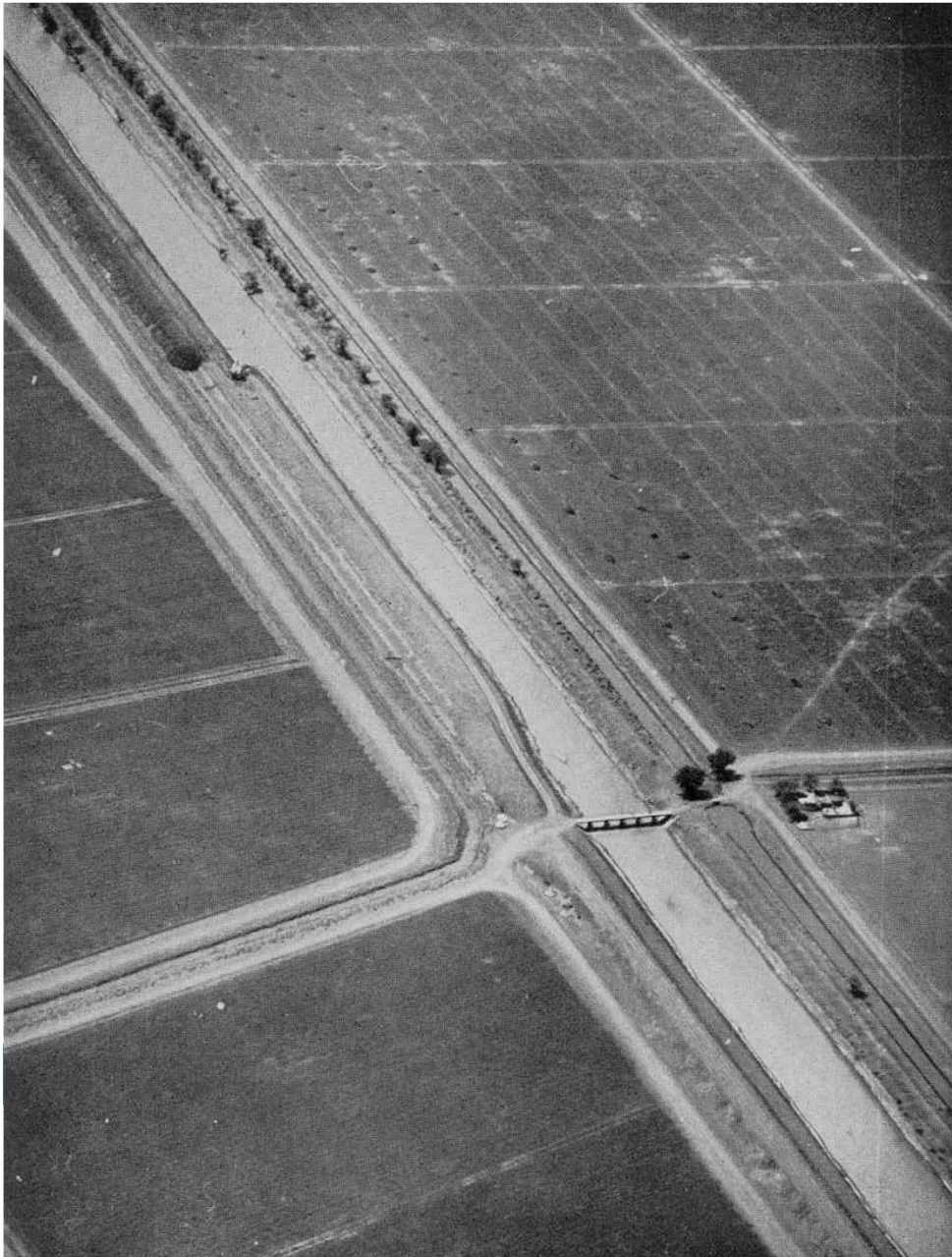


Number of warnings in the Mwea system in 1970/1971

<i>Subject</i>	<i>Jul-Sep</i>	<i>Oct-Dec</i>	<i>Jan-Mar</i>	<i>Apr-Jun</i>	Total
Maintenance of holding	56	140	8	68	272
Absenteeism	17	42	1	23	83
Failure to comply with instructions	100	85	23	25	233
Unauthorized use of irrigation water	9	39	-	13	61
Unauthorized livestock	3	2	-	2	7
Yield performance	-	-	-	1	1
House construction	11	-	4	-	15
Final warnings	11	18	1	7	37
Total	207	326	37	139	709

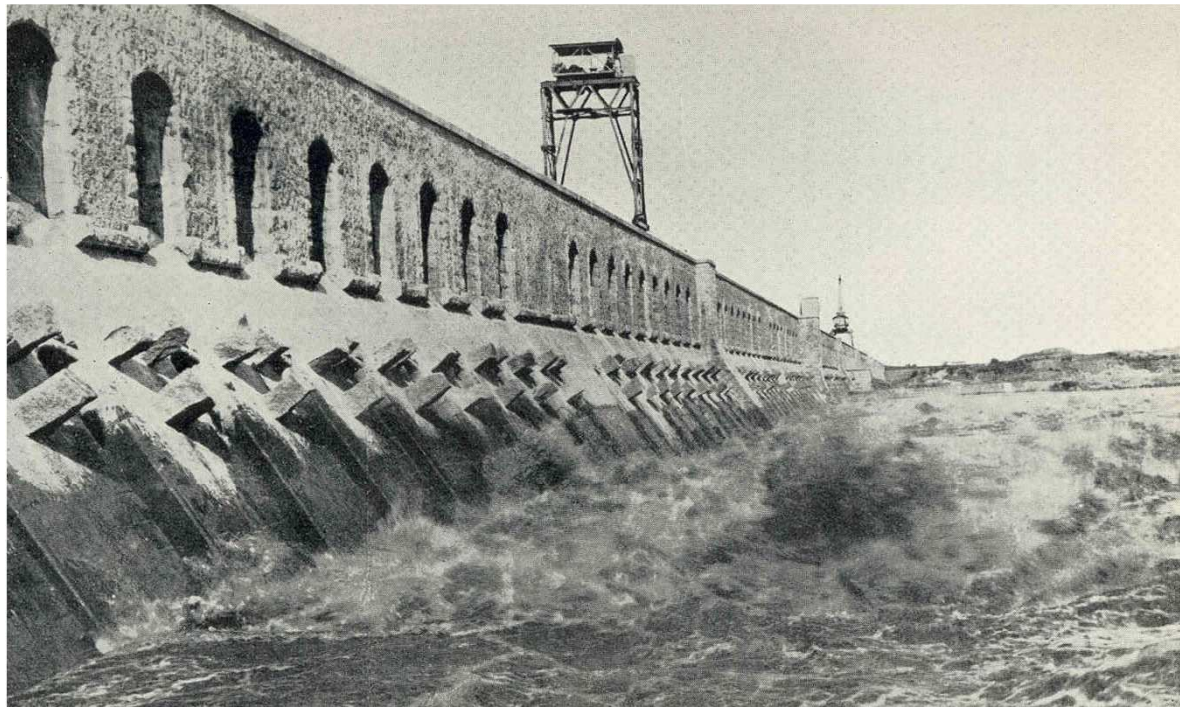
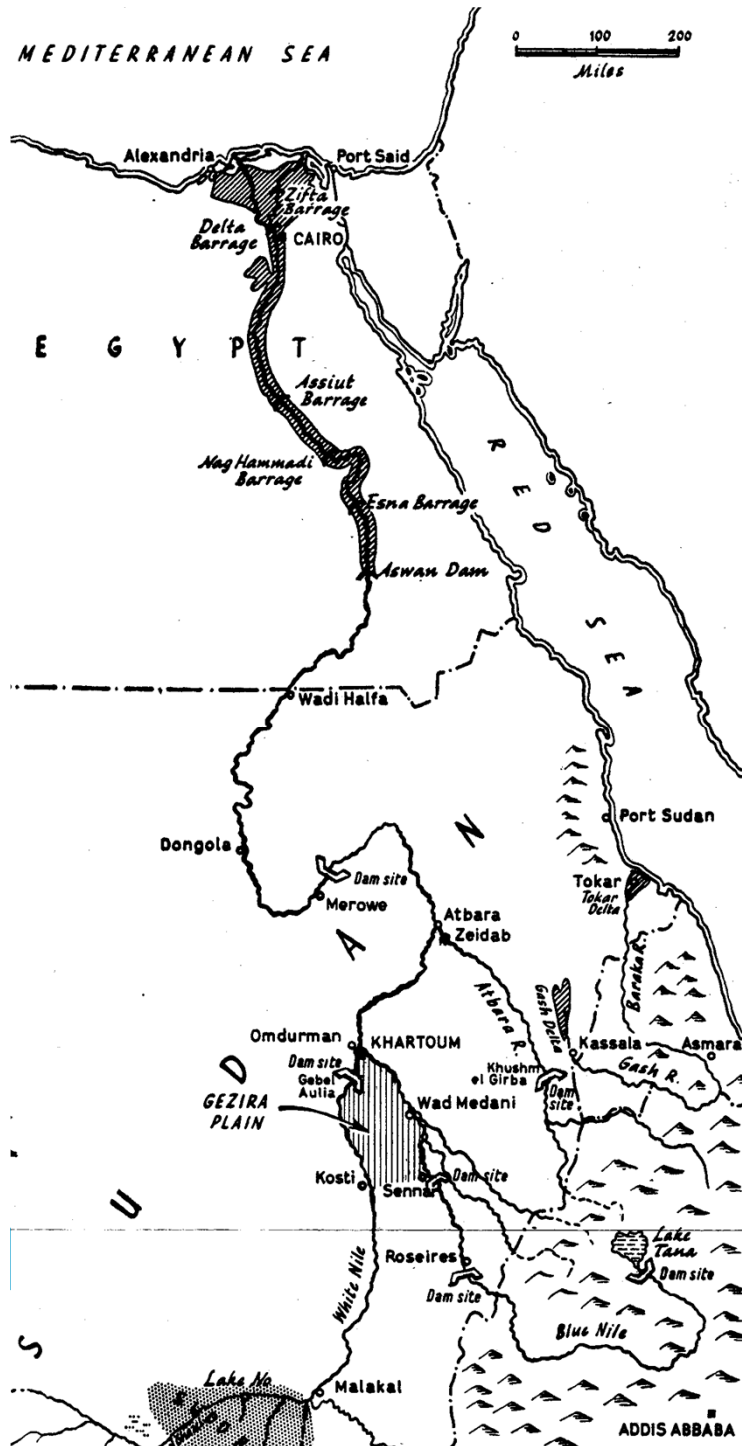
Source: Veen 1973; 125.

And through Mwea: Gezira, Sudan



The field personnel was "*superimposed like the canal system itself on the life of the Gezira*"







Irrigation and crop planning in Gezira

BASATNA MAJOR CANAL

CANAL ROAD

TALHA MINOR CANAL

CANAL ROAD

Field No. 1 Tenancy 1 COTTON	No. 2 I I DURA LUBIA	No. 3 I FALLOW	Field No. 4 Tenancy 10 COTTON	No. 5 10 10 DURA LUBIA	No. 6 10 FALLOW
Tenancy 2 COTTON	2 2 DURA LUBIA	2 FALLOW	Tenancy 11 COTTON	11 11 DURA LUBIA	11 FALLOW
Tenancy 3 COTTON	3 3 DURA LUBIA	3 FALLOW	Tenancy 12 COTTON	12 12 DURA LUBIA	12 FALLOW
Tenancy 4 COTTON	4 4 DURA LUBIA	4 FALLOW	Tenancy 13 COTTON	13 13 DURA LUBIA	13 FALLOW
Tenancy 5 COTTON	5 5 DURA LUBIA	5 FALLOW	Tenancy 14 COTTON	14 14 DURA LUBIA	14 FALLOW
Tenancy 6 COTTON	6 6 DURA LUBIA	6 FALLOW	Tenancy 15 COTTON	15 15 DURA LUBIA	15 FALLOW
Tenancy 7 COTTON	7 7 DURA LUBIA	7 FALLOW	Tenancy 16 COTTON	16 16 DURA LUBIA	16 FALLOW
Tenancy 8 COTTON	8 8 DURA LUBIA	8 FALLOW	Tenancy 17 COTTON	17 17 DURA LUBIA	17 FALLOW
Tenancy 9 COTTON	9 9 DURA LUBIA	9 FALLOW	Tenancy 18 COTTON	18 18 DURA LUBIA	18 FALLOW

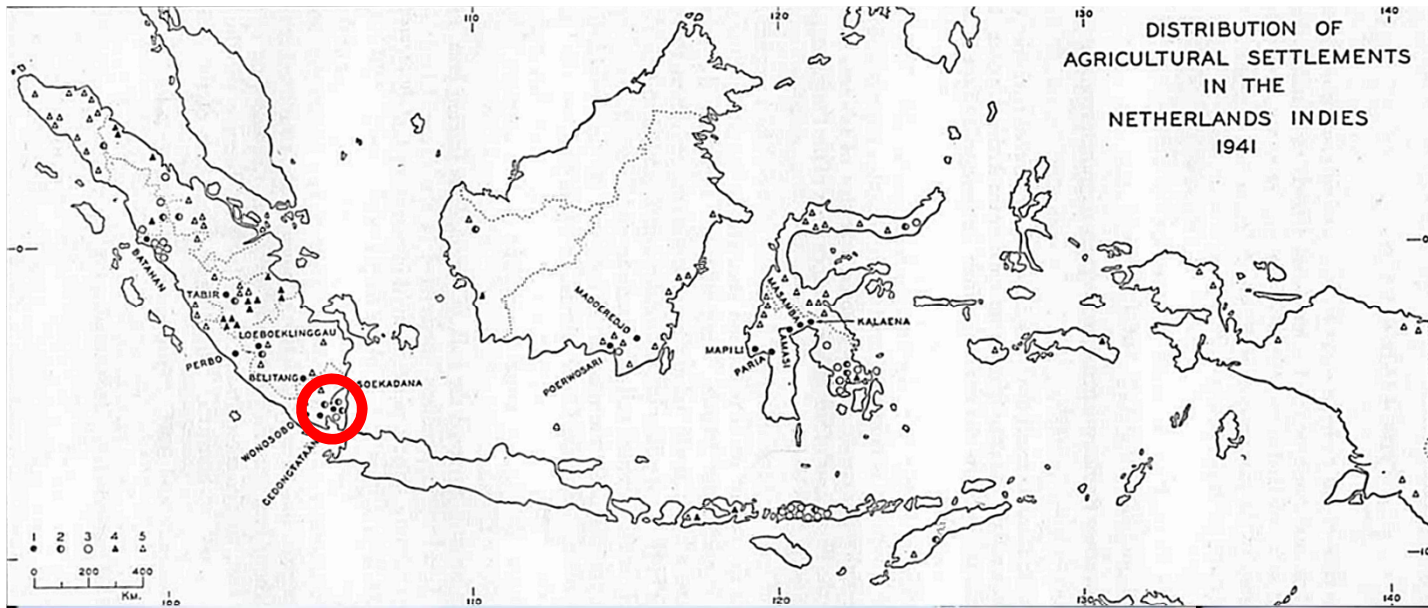
Crop Rotation and Watering System

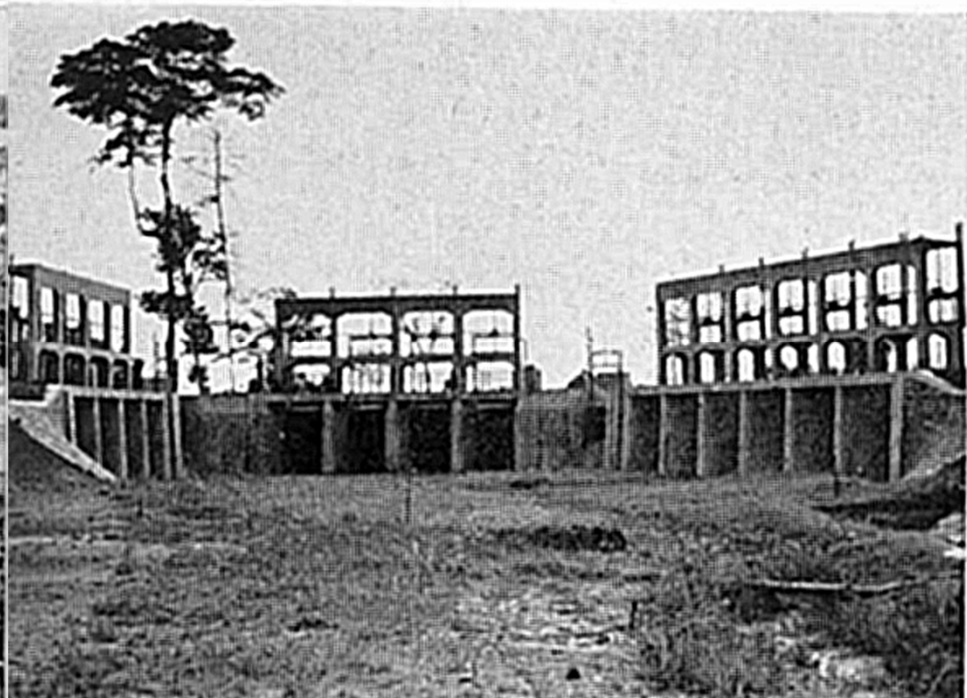
Translation of key principles of Gezira to Mwea

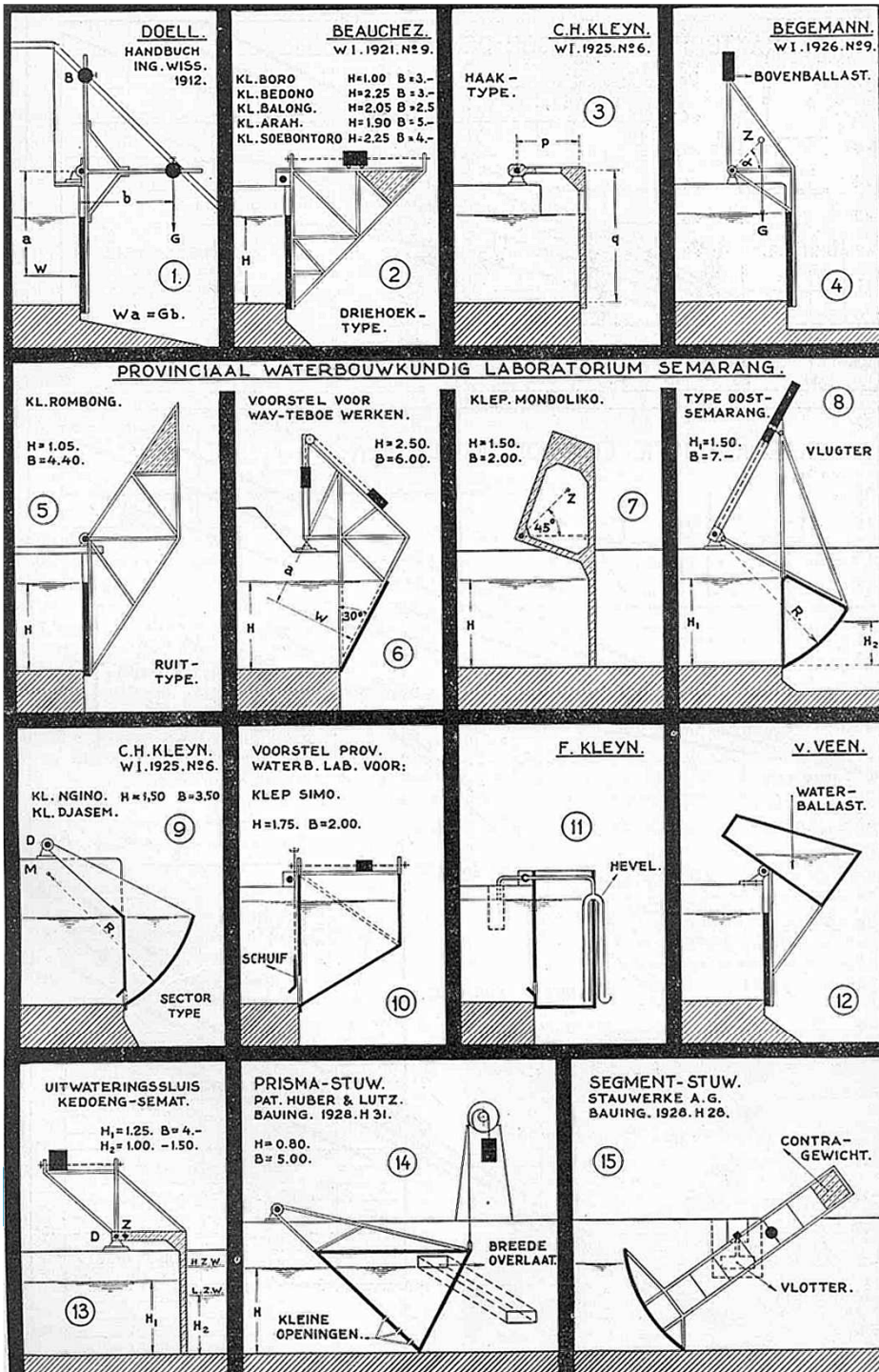
	<i>Gezira</i>	<i>Mwea</i>
<i>General approach</i>	A policy of control and help: control to ensure adherence to a productive system, help to make adherence at each point as easy as possible	All growers are licensed by the Scheme Management, renewably annually, and are subject to prosecution and eventual dismissal for failure to comply with the Settlement orders
<i>Land use and farming</i>	A planned system of land usage, based on scientific experiment and practical experience, and protected by a tenancy agreement	One Settlement order handles only one crop, irrigated paddy, whose essential operations are all vertically interlinked within the Scheme and Board organization.
<i>Field staff</i>	Efficient, active and honest management staff, whose conditions of service offer, as far as possible, a long-term interest in and sympathy with the project	The ratio of field staff to tenants is high, and there are parallel organizational hierarchies responsible for water control and husbandry advice
<i>Tenancy arrangements</i>	Legislation to protect the tenancy against subdivision, sub-letting, mortgage or foreclosure except by the management for a breach of the tenancy agreement	Each tenant receives the right to four one-acre irrigation units on entry, and is not eligible to expand his holding (by the addition of irregular sized 'extra fields') unless it has been well-managed

Inheritance II: Netherlands East Indies





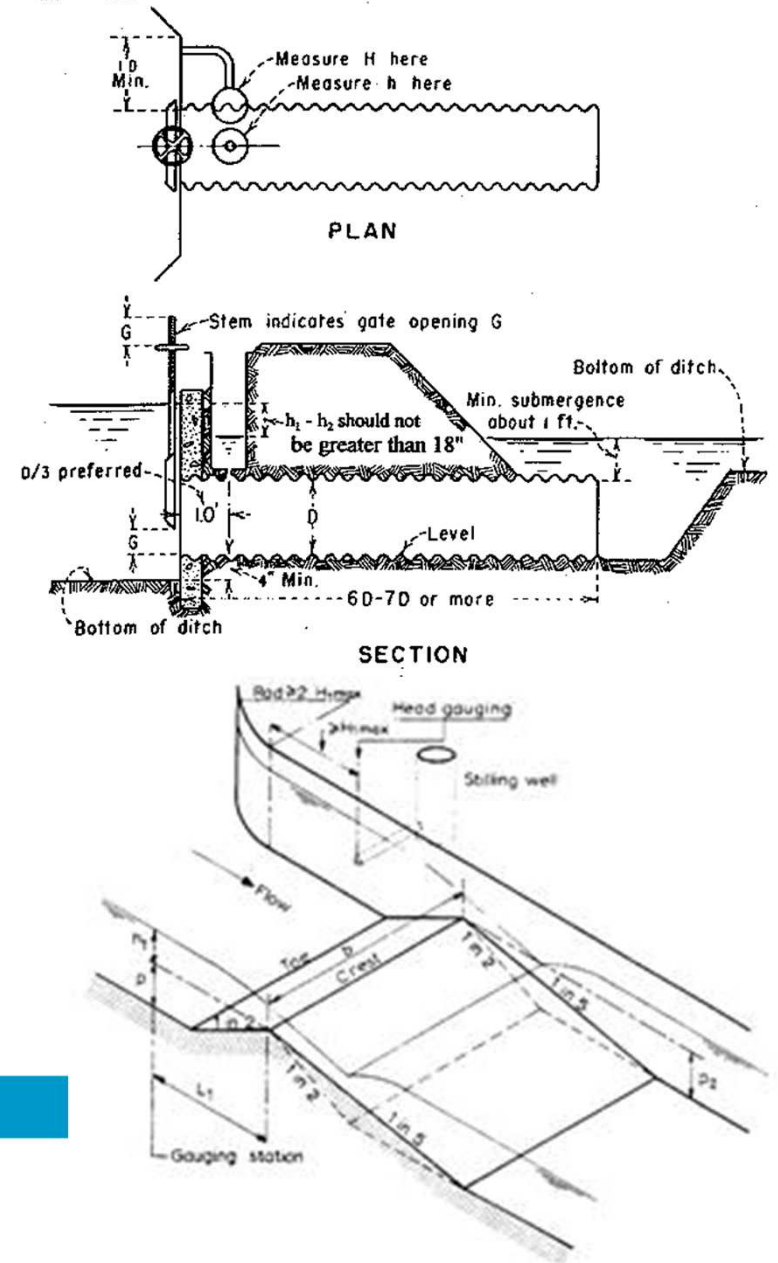




Although it had to be debated upon...

- Meter-gate as off-take, with a fixed weir in the secondary canal
- Crump weir as off-take, with a control structure operated through stop logs in the secondary canal
- An undershot gate as off-take with a Begemann structure in the secondary canal

Different approaches related to (colonial) engineering schools





In conclusion:

**Kano as arena for different engineering schools:
different technologies**



**Kano as post-colonial modernization effort of African
irrigation: shared idea of controlling the farmer**

But: times had changed

"[F]ull level extension workers **taught** farmers how to make the most of irrigation technology."

Farmers were also "**instructed** in the use of new and improved seed, fertilisers, insecticides and pesticides, as well as other inputs, in the right quantities and at the right time in conjunction with irrigation water."

The resulting "[...] **inability to discipline** non-cooperative farmers is a constant source of frustration to management."

It would never be the same again...



