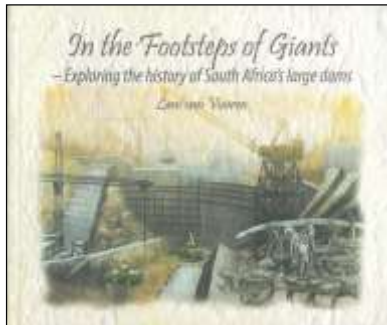




SUSTAINABLE IRRIGATION IN SOUTH AFRICA: EVIDENCE FROM HISTORY



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Presentation outline

- 1. Background**
- 2. History of irrigation development**
- 3. Case studies of sustainable irrigation**
- 4. Implications for the future**

Note: Based on a chapter by Lani van Vuuren of the book compiled by the ICID WG: History



Theme of the side event and international workshop

History of water crisis , old and recent issues

Definition of crisis:

A crucial stage or turning point in the course of something, especially in a sequence of events or a disease; an unstable period, especially one of extreme trouble or danger in politics, economics, etc.

A time when a difficult or important decision must be made

(Dictionary.reference.com, 2015)



Background

- **Productive agriculture sector, net food exporter**
- **Arable land: 15% of agricultural land**
- **Irrigation: 10% of arable land**
- **Mainly extensive agriculture in a semi-arid natural environment**
- **Water will limit future expansion of irrigation**
- **Less than 10% of population directly involved in agriculture**
- **At least 40% of population experience household food insecurity**



History of irrigation development

- **Phases of development**
 - **Agricultural phase up to 1875**
 - **Individual schemes**
 - **Agricultural-mining phase up to 1920**
 - **Co-operative schemes**
 - **Agricultural-mining-industrial phase up to 2015**
 - **Public schemes**

- **Purpose of irrigation development**
 - **Utilisation of water resources for agricultural development and prosperity of society**
 - **Economic existence/livelihoods of people in agriculture**

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History of irrigation development (Continued)

- **Various crises**
 - **Natural – Droughts, floods**
 - **Economic – Great depression, business cycles**
 - **Political – Colonial, apartheid, democratic governments**
 - **Social – Inequality, poverty, unemployment**

- **Current challenges**
 - **Productive water use**
 - **Uplifting rural economies**
 - **Business opportunities in food value chains**
 - **Eradicating hunger and reducing poverty**
 - **Improving food security, nutrition and health**

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Case studies of sustainable irrigation

- **Vaalharts, Lower Olifants and Loskop irrigation schemes (constructed in period 1930 – 1945)**
- **Observations common to most irrigation schemes**
 - **Infrastructure of dams/weirs/canals**
 - **Land area supplied with water/classification of soils as suitable for irrigation**
 - **Water allocation according to riparian doctrine, quotas and licensing**
 - **Crops cultivated (food, forage, fibre)**
 - **Irrigation technology (surface, sprinkler, micro/drip)**

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Case studies of sustainable irrigation (Continued)

- **Management of irrigation farms**
 - **Markets for crops/livestock: Local and international**
 - **Financing: Fixed and operating capital**
 - **Entrepreneurial and managerial capacity**
- **Management of irrigation schemes**
 - **IMT from government to private WUA**
 - **Reduction of canal water losses**
 - **Expansion of irrigation with water savings**

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Implications for the future

- **Major challenges**
 - Producing more food with same or less water
 - Decision support through R&D
- **Requirements for sustainability and preventing a crisis/turning point for national and household food security**
 - Adaptation to changing markets
 - Investment in maintenance of infrastructure and new technologies
 - Improvement in human and social capacity
 - Knowledge
 - Practical skills
 - Productivity growth
- **Lessons from history**
 - Learn from the past to prevent mistakes in future

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