

THE IMPACT OF CLIMATE CHANGE ON ACCESS TO FRESH WATER

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CLIMATE CHANGE AND VULNERABILITY

- The Fourth IPCC Report confirms that human induced Climate change has increased vulnerability and survival risks especially among the poorest communities everywhere in the world.
- The areas of greatest vulnerability are the tropical zones, mountain slopes, low coastlands and small island states.

RELATIONSHIP BETWEEN CLIMATE AND POVERTY

- In rural areas, the poorest communities live in marginal climatic zones - arid and semi arid lands, swamps and marshland, flood plains and mountain slopes.
- In urban areas, the poorest communities live in the marginal zones, or in unplanned condemned areas.

ACCESS TO FRESHWATER

- Access to freshwater determines whether an economy is sustainable or not.
- Surplus capital may be invested to make marginal land habitable.
- Examples: Israel, Australia, China; USA. Libya, South Africa, Kenya, etc.
- Communities without surplus capital are condemned to live on the edges of survival unless they are enabled to improve their habitat.

NATURAL AND ENGINEERED FRESHWATER SOURCES

- The powerful and the wealthy tend to claim ownership to lands with natural freshwater supply: – springs, rivers, lakes, islands, etc.
- The poor are pushed to those areas least endowed with freshwater supply- mountain tops, soggy plains, scrubland, semi-arid areas.
- Large-scale Engineered freshwater supplies require investments which only the powerful and the wealthy can afford – boreholes, dams, piped water systems.

WATER BEFORE FOOD

- In relief operations access to freshwater takes lower priority than food.
- Yet in reality freshwater is the first prerequisite for survival.
- Access to Energy is also ignored, with the consequence of deforestation for firewood.
- Relief operations have focused on dumping of processed and GM foods from the donating countries.

COMMUNITY BASED FRESHWATER HARVESTING

- **Sustainable communities are those which can produce their own food in their own habitat.**
- **Communities living in marginal areas have to improve their habitat before they can produce their own food.**
- **This improvement must begin with rainwater harvesting.**
- **The Rainwater harvesting technology must be locally owned and locally managed.**
- **The Rainwater harvesting technology must use local materials and local labour.**

ECOLOGY OF KENYA

- **80% of the country is semi-arid**
- **5% is mountainous**
- **Only about 15% is arable. Of this 15%, about 20% (3%) is urban, industrial and infrastructure**
- **Only about 10% is fertile and arable. Much in private titles owing to colonial history.**
- **The rest of the land is marginal land, where the majority of the people live.**
- **Why is this the situation? Historical, whereby the best land was alienated during the colonial period for settlers, and this process could not be reversed after independence. (cf. Zimbabwe and South Africa).**

INCREASING OUR USABLE FRESHWATER RESERVES

- **Total Evaporation** **500,000 km³ = 100%**
- **Evaporation from oceans** **428,500 km³ = 85.7%**
- **Evaporation from Land** **71,500 km³ = 14.3%**
- **Precipitation on Oceans** **389,700 km³ = 77.94%**
- **Precipitation on land** **110,300 km³ = 22.06%**
- **Net Freshwater Loss from Oceans** **38,800 km³ = 7.76%**
- **Net Gain of freshwater on land** **38,800 km³ = 7.76%**

- **Total Runoff on Africa** **= 11%** **4,225 km³**
- **Stable Runoff on Africa** **= 45%** **1901 km³**
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GLOBAL ANNUAL RENEWABLE RUNOFF

	RUNOFF	% SHARE	POPULATION	% STABLE
AFRICA	4,225	11%	11%	45%
ASIA	9,855	26%	58%	30%
EUROPE	2,129	5%	10%	43%
NA	5,960	15%	8%	40%
OCEANIA	1,965	5%	1%	25%
RUSSIA	4,350	11%	6%	30%
TOTAL	38,874	100%	100%	Av. 30%
	Cu. Km.			

GUIDELINES FOR SUSTAINABLE COMMUNITY-BASED PROGRAMMES

- **Responsible Leadership**
- **Basic-Need Priorities**
- **Locally-owned technology**
- **Culture affirming solutions**
- **Environment-enhancing solutions (Adding to Nature)**
- **Utilization of local expertise**
- **Utilization of local labour**
- **Utilization of local materials**
- **Minimal external inputs**
- **Limited external facilitation per project**

WAY FORWARD (INTERNAL)

- **1. Identify Sustainable Self-help communities.**
- **2. Learn from the history of each community.**
- **4. Encourage new communities to organize themselves to meet primary needs and solve local problems.**
- **5. Facilitate local communities with external support.**
- **6. Build networks of sustainable communities.**
- **7. Promote Alternatives to dominant norms of Globalization.**
- **8. Launch strategies for inter-generational learning.**
- **9. Build networks of learning communities**
- **10. Facilitate change of policy towards sustainable communities. (churches can do this through networks).**

IMPLEMENTATION

- 1. Sponsors
- 2. Network for ecumenical reflection
- 3. Teams of Consultants
- 4. Teams of Facilitators
- 5. Teams of Local Community Leaders
- 6. Networks of Sustainable Communities
- 7. Networks of Learning Communities

C HALLENGES

- 1. Closer cooperation with Governments**
- 2. Taking advantage of global gatherings as entry points for discussion on inter-related concerns.**
- 3. Stretching resources to cover all fronts**
- 4. Adaptation and mitigation measures North and South**
- 5. Providing Ecumenical spaces for sharing insights**
- 6. South-South co-operation and mutual learning**
- 7. Active participation of 'specialized Church ministries' – para-church organizations**
- 9. Economic Development as Priority of churches**
- 10. Training for effective community mobilization**

MOUNT KENYA CLIMATE AND WATER PROGRAMME

- Goal: To work with nature for rehabilitation of the Mount Kenya ecological Zone
- Justification: Mount Kenya is a volcanic range located on the Equator, 6,000 metres at the peaks. Its permanent glaciers for millennia, have recently melted. Focus on this ecological zone can bring the world's attention to the global ecological crisis dramatically.
- Concern: The survival of communities dependent on this mountain range is threatened, and there is great competition for water, pasture and farmland.
- Concerted Action: Local Christian communities to build a series of small dams across most of the rivers and streams around the Mount Kenya slopes.
- Strategy: Demonstration of new strategic cooperation focusing on Climate Change and Development.
- Outcomes: Improvement of the habitat of local communities with resultant expansion of options for economic production. Diversification of economic activity and industrial outputs. Opportunities for involvement of youth and women, the majority of the population in the present generation.
- Ecumenical Linkage: New opportunity for funding local initiatives.