LIVING WITH MUTLIPLE STRESSES AND RISKS IN SOUTHERN AFRICA, METHODS, MEASURES AND MEANINGS

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Global environmental change poses several challenges for society. Global environmental change includes a variety of multiple stresses that ultimately shape and configure various risks to society. Examples of such stressors include climate change and climate variability. By using a multiple stressor approach, the perceptions, vulnerabilities and adaptation strategies to climate stress are examined for selected cases in southern Africa. The role of institutions (both formal and informal), social networks and access to local markets are some of the key factors found to be either heightening or reducing vulnerability to climate stress. Based on this assessment and analysis, some recommended interventions are offered.

Keywords: Climate change, climate variability, risk reduction, adaptation, disaster risk reduction, drought

CLIMATE CHANGE AND AGRICULTURE IN SOUTH AFRICA: FOOD FOR THOUGHT . . . AND THOUGHT FOR FOOD

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Observations worldwide and in South Africa of increasing CO_2 concentrations and air temperatures indicate that global warming is a phenomenon that all sectors, including agriculture and forestry, will need to take heed of, and adapt to. This paper first outlines how plant : water relationships respond to changes in atmospheric CO_2 and how changes in the temperature regime, as well as in rainfall patterns, can have wide ranging repercussions in agriculture. Projections of future climate changes over South Africa, generated from regionally downscaled General Circulation Model output, indicate that monthly and daily changes in climate variables display much greater change and variability than annual changes. Some direct consequences of such climate change on the agricultural sector in South Africa are illustrated, e.g. by way of increases in potential evaporation and irrigation requirements, soils becoming drier, heat and chill units changing and climatically suitable areas for certain crops shifting both geographically and with altitude. Indirect consequences of climate change on the agricultural sector are also addressed; for example, alterations to groundwater recharge and shifts in the distribution of runoff. While prognoses on climate change are becoming ever more certain, the uncertainties which prevail with their potential impacts are discussed. A case study on potential impacts of climate change on a major irrigation project in Swaziland is presented, with potential impacts on reservoir performance, sugarcane yields and river outflows into neighbouring Mozambique under the spotlight. By way of conclusion, an outline is presented of ramifications of climate change on the agricultural sector, which include not only potential shifts in cropping patterns, but also anticipated changes in food security and in international trade.

Keywords: climate change, agriculture, consequences, uncertainties

PLANNING FOR DEVELOPMENT

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Planning for development in our city is about ensuring that we strike the balance between economic, ecological and community imperatives. If we allow any one of the three to dominate we will end up with a future too ghastly to contemplate.

If those who aim to make profits hold complete sway over the need to ensure we plan for all communities, rich and poor, and that we ensure our environment sustains itself we will certainly fail. And if those who want to restrict all development get their way without allowing for profitable developments and allowing people access into our open space system, the gap between rich and poor will certainly grow much wider. And if all we are interested in is providing housing for the poor which is not well located and which forces poor people to rely on petrol driven vehicles to search for jobs or get to work, then our environment will surely suffer and living wages will never be paid.

As a city, a lot of our energy is taken up trying to ensure that these three forces are in synch. In a period of quite frenzied development frustrations build in many different ways. When we don't produce rates certificates as fast as we did, or our building plans take longer to process, or rezonings go through long appeals, we get a lot of stick. Getting stick is actually quite good for us, because it forces us to review our systems and work out whether we have deployed our resources correctly to take care of the myriad of matters we must deal with. Some of the criticism may be unfair but we must learn to take the good with the bad.

And of course, there are those in the private sector who take advantage in such instances. Unscrupulous attorneys tell people that they can object to anything (as long as they pay the legal fees). Every set of building plans is now a contender for an appeal because some people with a legal background seem to claim views can't be blocked. However, the right to appeal does not mean that one must appeal, but rather that one should exercise the right appropriately and properly.

Urban development is under severe pressure and the next 30 years will require new sources of energy, greater food security, greater home security, much improved public transport and smart cities connecting all, not just those who can afford it.

This presentation aims to explore the pressure facing our city and human settlements throughout the world and will work through strategies on how we must collectively ensure that we align the three imperatives (economic, ecological and community).

Keywords: food security, ecology, economy, community