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Sustainable Resource Based Sanitation and Organic Waste Utilisation (*Sano*) in South Africa

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Joint German-South African Young Scientists Workshop Potchefstroom, South Africa, March 2013

Bauhaus-Universität Weimar, 2014

Preface

The UN has set health, environmental sustainability and global partnerships for development on the agenda of the eight Millennium Development Goals. It thus takes into account the ongoing challenges of the growth of urban areas and the simultaneous lack of entire infrastructures. Developing countries have a fundamental need for infrastructures for supply and disposal to ensure a minimum access to basic resources and a minimum standard of sanitation. Industrial nations are faced with stagnating population and shrinking rural areas. A major challenge is the demographic development in these countries. Both situations show the necessity for new, adopted infrastructure systems. The pursuit of "the best" solution is doomed to failure. A variety of " the best adapted solutions" has to be worked out. Their feasibility will be measured by the following criteria:

- Safety of supply and disposal,
- Efficiency of raw materials and energy,
- Environmental impact,
- Affordability and
- Social acceptance.

It is of particular importance that these issues of social relevance are taken up by universities. According to this understanding, the b.is – Bauhaus-Institute for infrastructure systems - utilized the German-South African year of research. Using the example of the South African city of Potchefstroom mixed South African-German teams with participants from academia and practice conceptualized innovative circuit and disposal systems. A special focus was put on the understanding of urban resources as raw material and energy source. An exciting process, where men and women, with different social backgrounds and experiences, northern and southern hemisphere, engineers and sociologists, lawyers and economists as well as different skin colors have been united. A forward-oriented, innovative working atmosphere based on the insight that the "business as usual" of the traditional European solutions cannot continue. The result: scenarios of a novel, modern texture of infrastructure using the example of Potchefstroom.

The funding by the German Federal Ministry of Education and Research (BMBF) enabled this workshop, the North-West University and the Bauhaus-Universität Weimar have given the framework and practitioners including the South African Water Research Commission have offered a mirror of reflection.

For this, they deserve the thanks of the involved Young Scientists, which could evolve their creativity in this embedding.

May the present volume give an insight into a modern format of science, spread professional impulses, strengthen the courage to try experiments and show the joy of science. Following Hermann Hesse, our motto is: "In order to achieve the possible, the impossible must be tried".

Yours

Prof. Dr.-Ing. Eckhard Kraft and Prof. Dr.-Ing. Jörg Londong

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