



RWH for a Sustainable City- SWITCH in China

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SWITCH in China

- Started from 2006 as consortium member, will be ended in early 2011
- Focused in Beijing & Chengdu with different themes:
 - Beijing-- Urban Agriculture development & Rainwater Harvest Demonstration
 - Chengdu– Eco-sanitation demonstration
- Process:
 - Identifying issues by Academic Research
 - Promoting new vision and strategies by Learning Alliance (up to 10 institutions involved as network partners)
 - Conducting cost-benefit analysis and proof by Demonstration
 - Up-scaling by trainings and dissemination

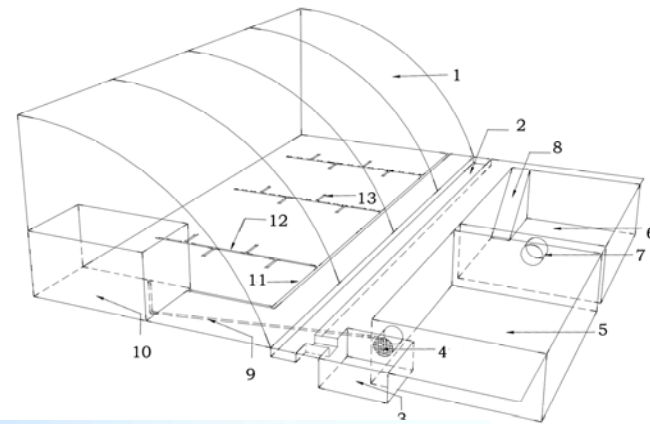
Rationale

- Fresh water per capita in China is only $\frac{1}{4}$ of the world average; Water scarcity in cities even worse.
- Beijing: $\frac{1}{8}$ of China average and $\frac{1}{30}$ of world average
- Rainfall become less since 1999, decreased from 600mm to over 300mm
- Underground water lever dropped 1 m each year & 8+ billion Cubic M accumulated underground water were over-extracted
- For a long time, over 50% of water in Beijing was used by agriculture. Agriculture still be the largest user, although in 2008, the percentage dropped to 34%
- 80% of rainfall in Beijing take place in June to September, which favors the rainwater harvest practice
- More greenhouses & dripping irrigation technology in peri-urban Beijing are being built & applied, which support the water self-contained for Urban Agriculture development
- Rainwater harvest practiced by farmers for thousands years & less difficult to be adopted in Northern part of China
- As relatively vulnerable sector, UA needs to find its way out for growing

Demonstration

- Cooperated with a Huairou Cooperative
- Designed an innovative RWH project: collecting rainwater from 5 greenhouses into a big ceiled pond for a multiple uses
- Pond used for mushroom growing in winter

Designed model & implementation



Result & Dissemination

- Cost-benefit analysis shows:
 - Up to 70% of rainwater can be collected;
 - Up to 80% of irrigation water can be replaced by rainwater
 - Social-environment benefit is high
- Potential RWH from greenhouses in Beijing can be high to 200 mil cubic m per year if all planned greenhouses could apply the RWH practice
- Promoted by SWITCH Beijing demo project, up to 700 RWH ponds have been built with 133 ha farmland in high value-added greenhouses being irrigated
- A patent for the innovative RWH tech is applying & a training program for farmers is under designed. Much more participants & RWH practices can be expected.
- SWITCH program in Beijing & Chengdu demonstrates:
 - A resilient city with sustainable development aspiration can be realized if appropriate technologies & integrated management with joint efforts can be put in place
 - A new assessment & evaluation system needs to be developed to capture the value of social and environmental improvement in cost-benefit analysis
 - Raising awareness to stakeholders is never late
 - Tomorrow's healthy water comes from today's harvest action