Summary: Session 3. Risk-sensitive Land Use Planning in Flood Management

Key Messages from Presentations

The day started with a framework presentation by Soumya Dharmavaram. She highlighted the need of incorporating risk prevention and management into land use planning, which seems to be evident, but is not always done. She reminds us that flood risk is natural, but flood disasters are not.

The usual adoption of structural measures is no longer enough when dealing with flood risk. There is a limit to the efficacy of traditional structural measures, since they work up to a point, but won’t eliminate risk. These measure must therefore be complemented by non-structural measures in order to reach an acceptable level of risk.

Land use planning incorporates many of such non-structural measures, and can provide solutions for some of the problems it has itself created. For instance, land use changes and urbanization have changed the frequency and volume of floods. Changing land use approaches could therefore contribute to reducing risks.

Some of the challenges for land use planning related to flood risk include:

- understanding and assessing the risk
- producing locally relevant information, in an appropriate language (it is often only available in highly technical jargon)
- in many cases, there is no legislation mandating incorporation of risk on land use plans
- cities have low technical capacities and scarce human resources.

The first presentation on the Korean case, was made by Dr. LEE from KRIHS. His lecture was titled “Urban Planning Based on Disaster Vulnerability Analysis in Korea”.

Dr. Lee described some aspects of the methodology KRIHS is using for assessing vulnerability and advising central and local governments on risk reduction. He insisted on the need to use the urban, even regional scale when analysing vulnerability, since the risk concerns the entire city and even region. For instance, the risk can be produced in one area, but the flood occurs in other part of the city. We need therefore to undertake a comprehensive analysis of the area.

The second presentation was in charge of Mr. HONG, from Shinyoung ESD. His topic was “Cases of Urban Climate Disaster Vulnerability Analysis for Climate Change Response”.

Mr Hong discussed several examples of disaster vulnerability analysis for climate change response. He told us that Korea planning is trying to shift from reaction and post-recovery approaches, to a risk prevention approach.

Through three case studies, we could learn at what stage of the planning process the vulnerability analysis is incorporated, and which indicators we should look for. His exposition focused on described the best scale of analysis, the relevant information for the assessment and how Korean analysis have learnt their lessons from past natural disasters.
Participant Presentations

After a round of questions and answers, it was the turn of participants to present the challenges in their cities for dealing with risk of flood from the trenches of land use planning. We learn about the situation in Accra (Ghana), Phnom Penh (Cambodia), Asunción (Paraguay) and Jaffna (Sri Lanka).

Each case presented some specific features. For instance, the origin and type of flood may differ in each city: flash floods in Accra, river flood in Asunción and Phnom Penh, and lagoon front and flatness of the territory in Jaffna. Also, population densities are not the same: while Accra has high density, increasing the exposure to risk, in Paraguay the population is disperse, which represents a problem for the adoption of planning measures. Besides, in the case of Asunción, the river passes not only through several states, but through several countries, with the consequent difficulties for basin level management.

There are however several common features among the cases presented and as emerged from the discussion:

- an absence of integration of risk analysis into land use planning
- masters plans, when existing, are outdated and do not take into account the risk of flood
- there is an inadequate drainage system, not only because natural drainage has been modified and perturbed, but because the sewage infrastructure is obsolete and poorly maintained
- there is a lack of human resources in their municipalities. Not only the have low technical capacities, but also they lack of software and equipment for properly conducting assessments of the risk
- there is low political will; the authorities allocate the resources on other projects and not on prevention, except in the cases when major disasters have changed this attitude, as is the case in Sri Lanka after the tsunami
- laws and regulations are outdated
- there is an urgent need for coordination. There is a disconnection between local agencies, levels of government, and between the population and the government. These all result also from the way institutions are structured
- even when a city has good risk analysis, there is a lack of technicians, appropriate software and equipment to transfer from vulnerability assessment to land use planning.

Site Visit

In the afternoon, Dr. LEE, from the National Forestry Cooperative Federation, made an interesting presentation about a landslide case in Mountain Woo-myeon. Dr. Lee shared his personal experience on dealing with this natural disaster, and how they implemented solutions for repairing the area and preventing the risk.

We had the great opportunity of visiting the area with Mr. Lee, who generously shared his experience and the lessons learned from what went well and wrong in the response after the disaster.