

Linking DRR and Water Management for Community Resilience

A case study from the Irrawaddy Delta, Myanmar

Nicole Stolz, Senior DRR Advisor

Ni Ni Soe, DRR Programme Manager,
KMSS

22 June 2016, Berne



Natural Disasters in Myanmar

- Cyclone Nargis (May, 2008) – 140'000 people dead /missing
- Floods in Northern Rakhine State (June, 2010) – 68 people dead
- Cyclone Giri (October, 2010) – 45 people dead
- Earthquake in Shan State (March, 2011) – 74 people dead
- Floods in Magway Region (October, 2011) – Over 30,000 people were affected
- Floods across Myanmar (August, 2012) – Over 287,000 people were affected
- Earthquake in Northern Myanmar (November, 2012) – 16 people killed
- Floods Rakhine (July 2015) - 110 people killed



Ongoing Efforts by the Government

- Post-Nargis Response and Preparedness Plan (PONREPP) by the Tri-Partite Core Group (TCG) outlined ways to reduce hazards and limit the effect of future disasters
- One of the 168 countries that endorsed the Hyogo Framework for Action (HFA) in 2005
- A signatory of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER), in 2009
- Published the Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) in 2009
- Developed DRR Strategic Plan (2013-2018)
- Approved Disaster Management Law in 2013

TCG (2009), “PONREPP”, http://www.mm.undp.org/UNDP_Publication_PDF/PONREPP.pdf

UNISDR (2005), “Hyogo Framework for Action”, <http://www.unisdr.org/we/coordinate/hfa>

Mainstreaming DRR into WASH

- KMSS started first phase of CBDRR project in 2010 in 7 communities (4 in delta, 2 in dry zone, 1 in hill region)
- In 2013 it started a WASH/DRR project in 50 communities
- Case study concentrates on the Irrawaddy Delta





Risk situation in Irrawaddy Delta

- Fertile, low-lying and densely-populated area
- Rice cultivation and fishing dominate economic activity
- Delta region between the Bay of Bengal and the Andaman Sea
- Consists of 26 townships, covering a total of 35,964 km²
- 6.1 million people - comprising 12% of the national population
- Prone to climate and meteorological related disasters : Floods, storm surge, tsunami, drought, tidal erosion.
- Poor WASH infrastructure is especially affected by disasters
- Cyclone Nargis the disaster, which impacted most on the life's in the delta: 138,000 lives lost



Challenges on WASH

Water Sources

- **Water ponds** – low embankment, no protection, flooded in rainy season, water shortage in dry season
- **Shallow tube wells** – contamination with iron and manganese, flooded in rainy season
- **Open well** – no roof, no proper head and platform, no systematic collecting materials, water shortage in dry season

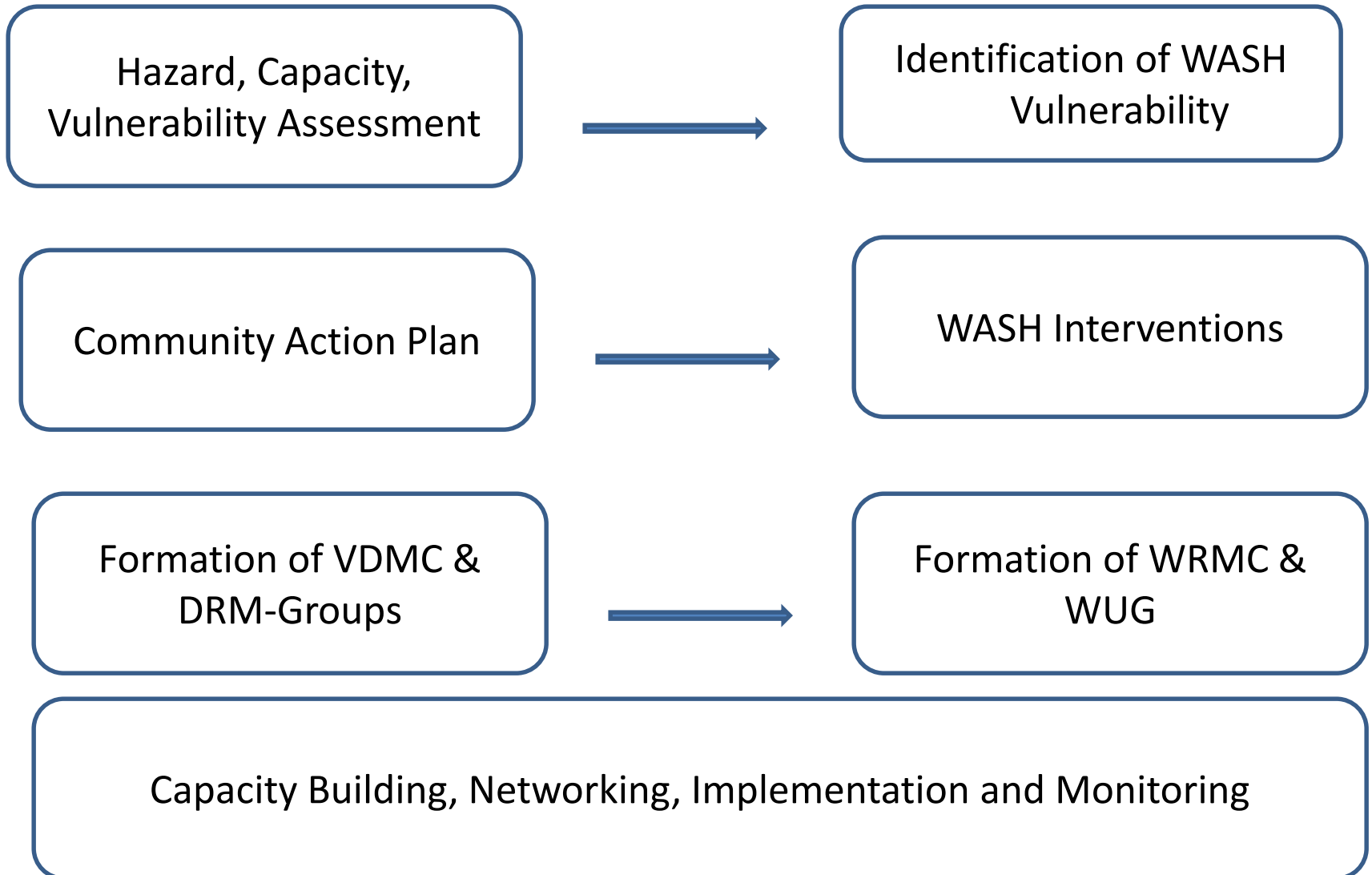


Sanitation

- No flood proof latrines
- Lack of knowledge on sanitation and hygiene
- No containers and fluid waste



Steps of CBDRR & WASH



Hazard Vulnerability Capacity Assessment (HVCA)

- **Hazard Assessment**
 - (Multi)Hazard identification (recurrence/seize)
- **Vulnerability Assessment**
 - Exposure of people (hazard zones)
 - People, with special needs
 - Assets at risk
- **Resources Assessment**
 - What can the community contribute
 - What is needed from external actors
 - How the community can access those resources

အိမ်ရာအိမ်ရာ

အိမ်ရာ

၈၂
၁၃၅
၃၂



Community Action Plan

1. Predefined project driven low cost DRR measures such as designation of safe havens
2. Mapping of most vulnerable families and definition of how community can/must support them
3. Identification of measures to manage disaster risks
4. Feasibility of measures is assessed and rough budget calculated
5. Ranking of measures according to cost/benefit
6. Mobilisation of internal and external resources
7. Implementation of stand alone and DRR mainstreaming measures





Examples of DRR mainstreaming measures:

- Implementation of DRR is very often an integral part of **resilient infrastructure** development:
 - **Elevation** of houses, latrines, paths, filters, gardens
 - **Protected/closed** wells
 - **Flood safe** community water filters
 - Hygiene awareness (**for flood season, for dry season**)
- Implemented DRR is very often a **resilient livelihood** development
 - **Stabilisation** of slopes through terracing
 - Irrigation channels (drought risk)
 - **Drought** resistant seeds
 - Silos to store harvest / **rice banks**

Community Action Plan (2/2)

Stand alone DRR measures

- Emergency recovery fund
- Early warning systems
- Safe havens
- DRR mitigation infrastructure: wind fences, tidal fences...

Major Achievements

Structural Measures

- Flood proof water filters
- Flood proof latrines
- Improved water sources
- Designation of / construction of safe haven



Major Achievements

Non Structural Measures

- Increased social cohesion, responsibility and solidarity
- Pooling of resources at community level
- Behavioral Change related to hygiene and safe storage and use of water

