

**International Symposium on
Integrated Actions for Global Water and Environmental Sustainability**
In line with the Commemoration of the 70th Anniversary of UNESCO



21-22 October 2015, Medan, Indonesia

**International Flood Initiative (IFI) and
International Drought Initiative (IDI)**

Implementation Now! How to Address?

Learn from and support to national and local platforms to practice evidence-based flood and drought risk reduction.

- Considering how to share best practice eg. WWF7 Implementation Road Map.
- Monitoring
 - Activities, progress, achievements
- Data Collection & Sharing, Statistics
- Risk Monitoring
- Early Warning and Risk Assessment
- Financing mechanism
- Capacity Building

Mobilize existing networks of scientific and research institutions, at national, regional and international levels.

- Synthesis
- Advice to Stakeholders
- Communication and Engagement

Implementation Now! How to Address?

Learn from and support to **national and local platforms** to practice evidence-based flood and drought risk reduction.

- Considering how to share best practice eg. WWF7 Implementation Road Map.
- Monitoring
 - Activities, progress, achievements
- Data Collection & Sharing, Statistics
- Risk Monitoring
- Early Warning and Risk Assessment
- Financing mechanism
- Capacity Building

Mobilize **existing networks** of scientific and research institutions, at national, regional and international levels.

- Synthesis
- Advice to Stakeholders
- Communication and Engagement

Second UN Special Thematic Session on Water and Disasters



9:30-17:50

Wednesday, November 18, 2015

The UN Headquarters, New York

Organizers

UN Secretary-General
co-organized by
UN Secretary-Generals'
Special Envoy on Disaster
Risk Reduction and Water
and High-level Experts and
Leaders Panel on Water
and Disasters (HELP)



Science and Technology to Advance DRR on Water

Key Directions and Actions

Key Direction 1:

Improve data collection, sharing, integration and dissemination

Suggested Actions

- Support countries to collect damage data and maintain disaster statistics.
- Develop methodologies for measuring flood and drought risk and resilience based on improved understanding of disaster mechanisms and socio-economic characteristics.
- Enhance real-time data availability for early warning.
- Promote coordinated and sustained satellite observations: rainfall(PR), flooding area (SAR), drought index (MR)
- Enhance data integration and analysis capability.

Key Directions and Actions

Key Direction 1:

Improve data collection, sharing, integration and dissemination

Suggested Actions

- Support countries to collect **damage data** and maintain **disaster statistics**.
- Develop methodologies for **measuring flood and drought risk and resilience** based on improved understanding of disaster mechanisms and socio-economic characteristics.
- Enhance **real-time data availability** for early warning.
- Promote coordinated and sustained **satellite observations**: rainfall(PR), flooding area (SAR), drought index (MR)
- Enhance **data integration and analysis** capability.

Key Directions and Actions

Key Direction 2:

Advance inter-disciplinary and trans-disciplinary research on flood and drought risk reduction

Suggested Actions

- Promote dialogue among stakeholders, share needs and co-design collaborative research plans.
- Enhance collaboration between natural science and socio-economic science communities by taking advantage of data integration and analysis infrastructure for assessing risk and resilience.
- Co-produce evidence-based actionable information and knowledge for reducing flood and drought risk and building resilience.

Key Directions and Actions

Key Direction 2:

Advance inter-disciplinary and trans-disciplinary research on flood and drought risk reduction

Suggested Actions

- Promote dialogue among stakeholders, share needs and **co-design** collaborative research plans.
- Enhance collaboration between **natural science and socio-economic science** communities by taking advantage of data integration and analysis infrastructure for assessing risk and resilience.
- **Co-produce** evidence-based actionable information and knowledge for reducing flood and drought risk and building resilience.

Key Directions and Actions

Key Direction 3:

Promote regional cooperation by mobilizing existing international initiatives for supporting local/national efforts.

Suggested Actions

- Promote dialogue among representatives of administrative, civil and scientific communities, UN agencies, regional development banks and private sectors.
- Develop regional cooperative frameworks on flood and drought and make implementation plans for demonstration and/or prototyping of regional flood and drought monitoring and early warning support system.
- Share good practices of evidence-based flood and drought risk reduction.

Key Directions and Actions

Key Direction 3:

Promote regional cooperation by mobilizing existing international initiatives for supporting local/national efforts.

Suggested Actions

- Promote **dialogue** among representatives of administrative, civil and scientific communities, UN agencies, regional development banks and private sectors.
- Develop **regional cooperative frameworks** on flood and drought and make implementation plans for demonstration and/or prototyping of regional flood and drought monitoring and early warning support system.
- Share **good practices** of evidence-based flood and drought risk reduction.

Asia Water Cycle Symposium (AWCS2016)

1-2 March 2016, Tokyo, Japan



161 participants from 20 countries
and 4 UN organizations

Integrated Water Resources Management (IWRM)

Integrated Flood Management (IFM)

Minimizing
social, environmental and economic risks

Maximizing
net benefits from the use of flood plains

Sendai framework
SDGs
UNCCC COP21



IFI implementation steps

climate change, changes in anthropogenic activities

inter-disciplinary, trans-sectoral and basin-wide approaches

Understanding of current status

- magnitude of flood hazards
- impact of development
(changes in exposure, vulnerability)
- shortage of resources
- shortage of political will



Planning

- stakeholder participation
- cultural diversity
- impact & cost/benefit assessment
- decision making



Implementation

- early warning systems
- land use management
- effective infrastructure development
- increasing people's awareness
- institutional frameworks
- building back better



Follow-up

- risk re-analysis
- clarifying problems
- identifying areas to be strengthened



IFI supporting tools

database

(statistics of flood damages/benefits and flood management knowledge)

science & technology

(monitoring technology, simulation tools, risk assessment methodology, clear indices)

local, national, regional initiatives

(IFI-AP, IFI-LAC etc.)

capacity building

(training courses)

financial mechanisms

(economic analysis tools and methods)

Focus Areas

Monitoring

Hazard
Assessment

Exposure
Assessment

Vulnerability assessment
and capacity building

Finance and
investment

Expected Stakeholders

IFI promoters
(International organizations etc.)

Academic Society
(universities, research institutes etc.)

Government
(water, disaster etc.)

Funding
Agencies
(ODAs, Banks, UN etc.)

DB operational
supporters

Project investors
& owners

- Analyzing and formulating policies
- Visualizing values of preparedness and investment efficiency

**Support in
Sound Policy-making**

- Improving disaster literacy
- Promoting co-design and co-implementation among stakeholders

**Support in
Community of Practice**

Risk Assessment

**Risk Change
Identification**

Data & Statistics

- Developing integrated disaster risk assessment
- Identifying locality and commonality

- Monitoring and predicting changes in disaster risk
- Identifying locality and commonality

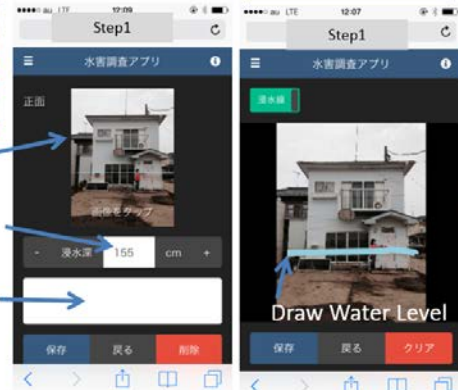
- Promoting data collection, storage, sharing, and statistics
- Integrating local data, satellite observations and model outputs



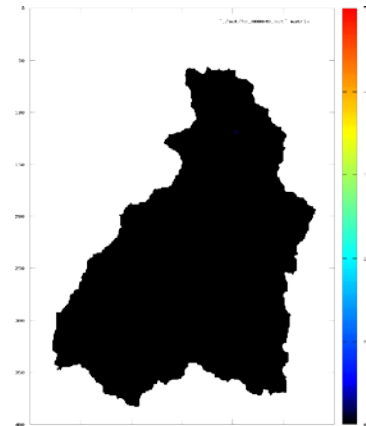
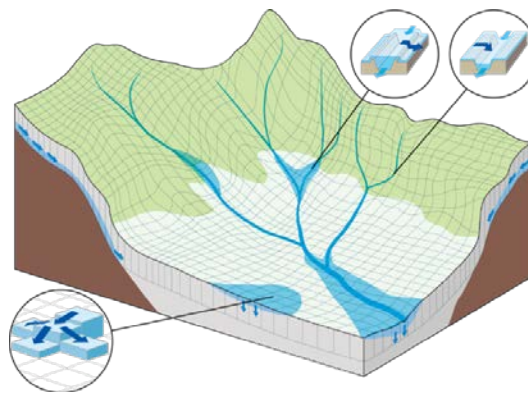
Upload Building Photo

Input Water Level(cm)

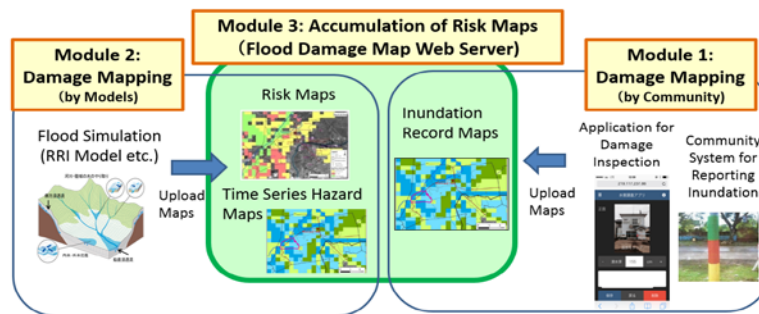
Input some comments on damage



Upload Button



systematic
+participatory
+accountability



linkage
with line-agencies

Support in
Sound Policy-making

Support in
Community of Practice

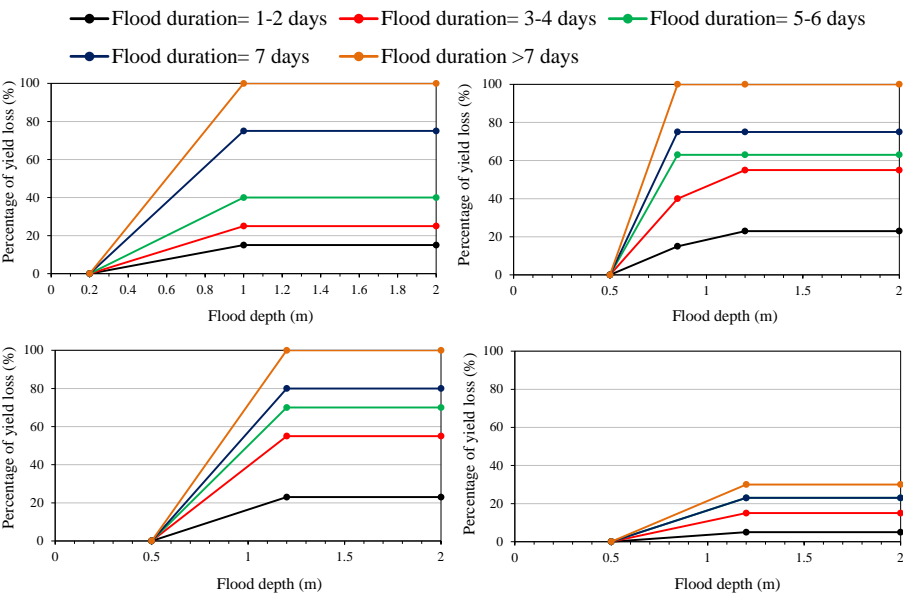
Risk Assessment

Risk Change
Identification

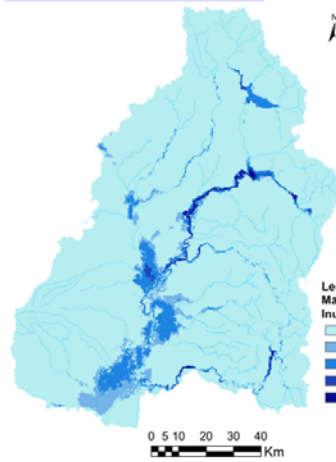
Data & Statistics

- Promoting data collection, storage, sharing, and statistics
- Integrating local data, satellite observations and model outputs

Crop Damage Function

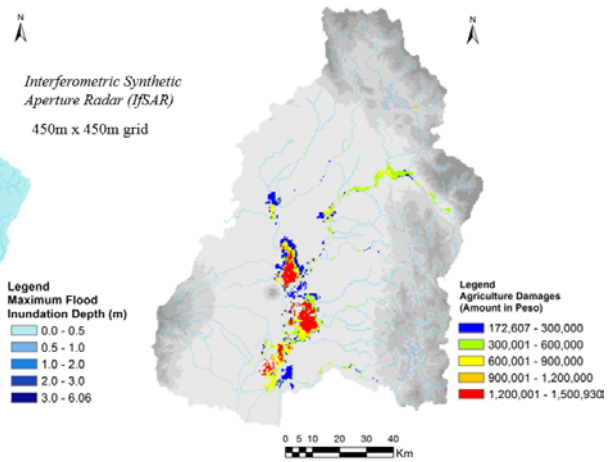


September 2011 Flood



Flooded areas (>0.5m depth)= 45,056.25 ha

Depths*Damage Function



Damages: 1,475.78 million Peso

Rice Yield = 4360 kg/ha
Farm gate price of rice = 17 Peso/kg

Support in
Sound Policy-making

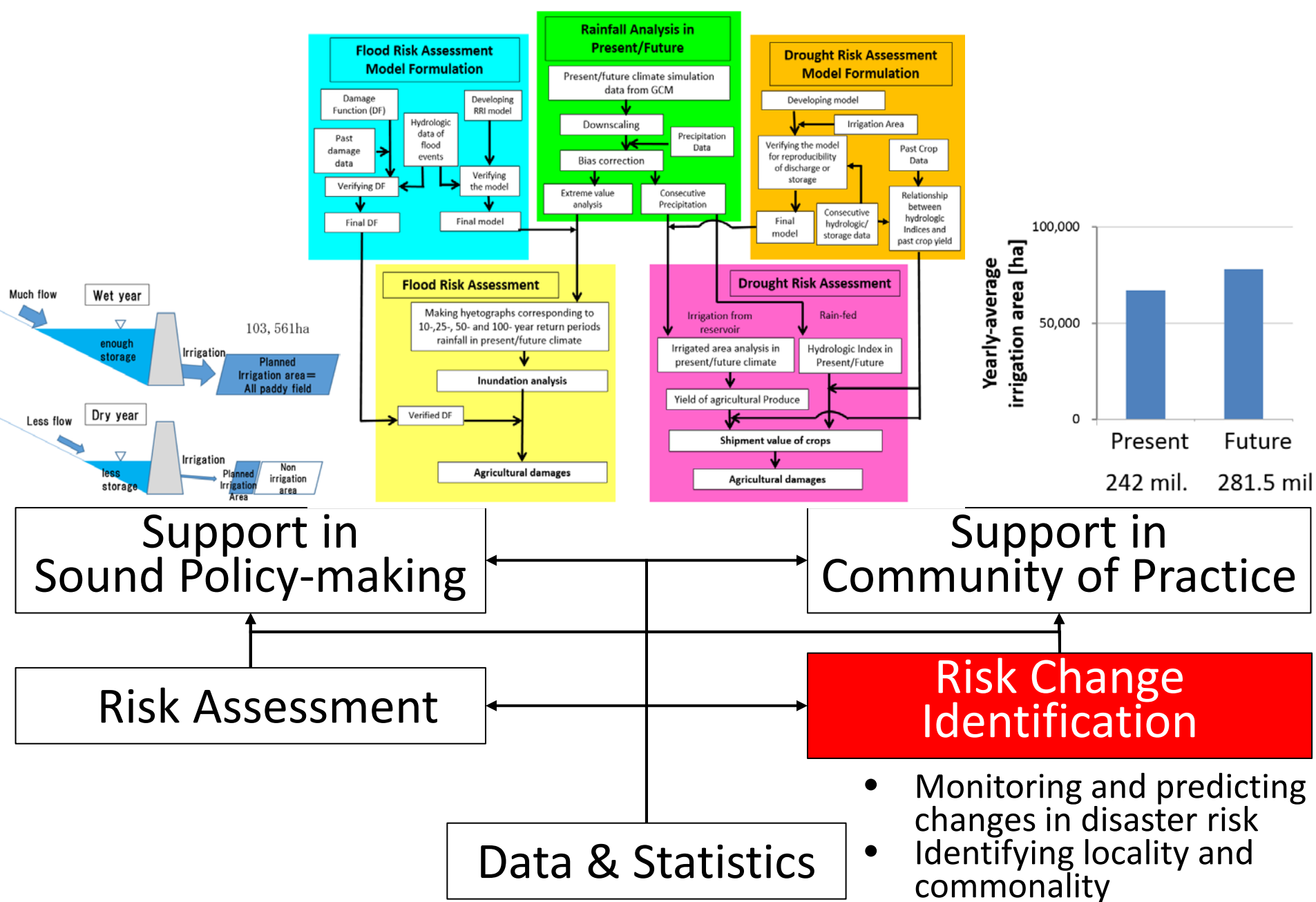
Support in
Community of Practice

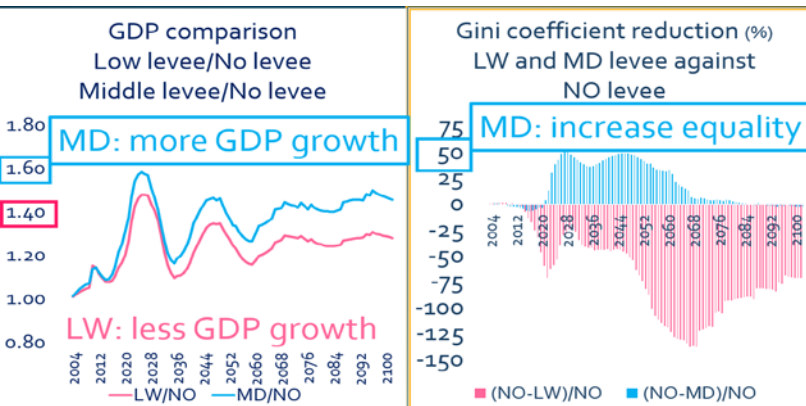
Risk Assessment

Risk Change
Identification

Data & Statistics

- Developing integrated disaster risk assessment
- Identifying locality and commonality





- Analyzing and formulating policies
- Visualizing values of preparedness and investment efficiency

Flood simulation

1. Develop of flood models to reproduce actual flood damage.

2. Demonstrate counter measure effects for reducing damage.

3. Translate flood model outputs into economic model inputs

Economic simulation

4. Develop economic models to reproduce actual economic parameters.

5. Simulate effect of the counter measures on economy and society with several scenarios.

(Disaster Risk Reduction investment Accounts for Development (DR^2AD), Yokomatsu, 2013)

Support in Sound Policy-making

Support in Community of Practice

Risk Assessment

Risk Change Identification

Data & Statistics

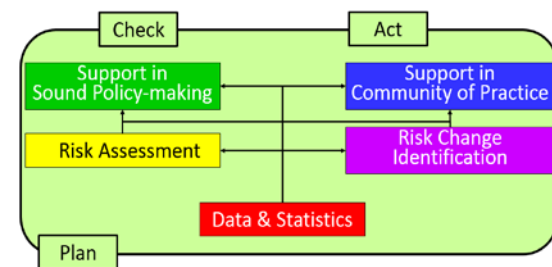
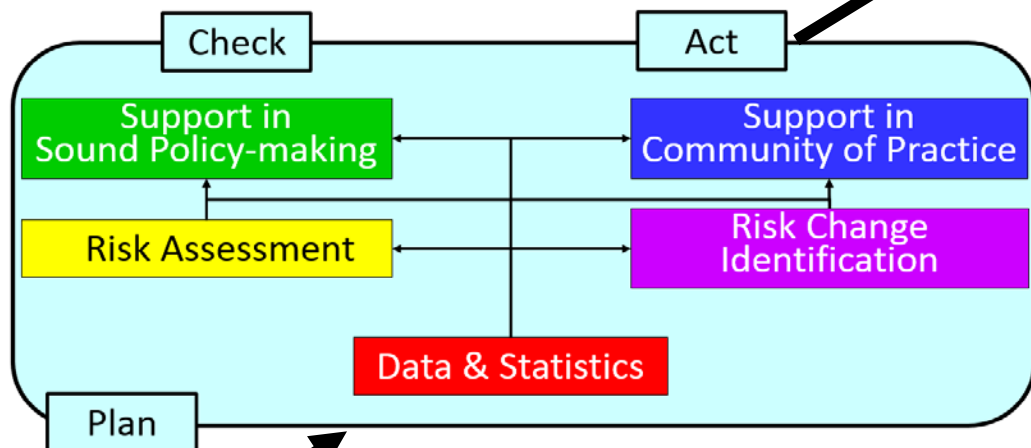
		Barangay Sta. Lucia			
		Legend			
		less than 3% (0.024m)		less than 4% (0.12182 m)	
		less than 4% (0.12182 m)		more than 4% (0.12182m)	
		Inundation depth (m)			
		Day1	Day2	Day3	Day4
		Day5	Day6	Day7	Day8
		Day9	Day10	Day11	Day12
		Day13	Day14	Day15	Day16
		Day17	Day18	Day19	Day20
		Day21	Day22	Day23	Day24
		Day25	Day26	Day27	Day28
		Day29	Day30	Day31	Day32
		Day33	Day34	Day35	Day36
		Day37	Day38	Day39	Day40
		Day41	Day42	Day43	Day44
		Day45	Day46	Day47	Day48
		Day49	Day50	Day51	Day52
		Day53	Day54	Day55	Day56
		Day57	Day58	Day59	Day60
		Day61	Day62	Day63	Day64
		Day65	Day66	Day67	Day68
		Day69	Day70	Day71	Day72
		Day73	Day74	Day75	Day76
		Day77	Day78	Day79	Day80
		Day81	Day82	Day83	Day84
		Day85	Day86	Day87	Day88
		Day89	Day90	Day91	Day92
		Day93	Day94	Day95	Day96
		Day97	Day98	Day99	Day100
		Day101	Day102	Day103	Day104
		Day105	Day106	Day107	Day108
		Day109	Day110	Day111	Day112
		Day113	Day114	Day115	Day116
		Day117	Day118	Day119	Day120
		Day121	Day122	Day123	Day124
		Day125	Day126	Day127	Day128
		Day129	Day130	Day131	Day132
		Day133	Day134	Day135	Day136
		Day137	Day138	Day139	Day140
		Day141	Day142	Day143	Day144
		Day145	Day146	Day147	Day148
		Day149	Day150	Day151	Day152
		Day153	Day154	Day155	Day156
		Day157	Day158	Day159	Day160
		Day161	Day162	Day163	Day164
		Day165	Day166	Day167	Day168
		Day169	Day170	Day171	Day172
		Day173	Day174	Day175	Day176
		Day177	Day178	Day179	Day180
		Day181	Day182	Day183	Day184
		Day185	Day186	Day187	Day188
		Day189	Day190	Day191	Day192
		Day193	Day194	Day195	Day196
		Day197	Day198	Day199	Day200
		Day201	Day202	Day203	Day204
		Day205	Day206	Day207	Day208
		Day209	Day210	Day211	Day212
		Day213	Day214	Day215	Day216
		Day217	Day218	Day219	Day220
		Day221	Day222	Day223	Day224
		Day225	Day226	Day227	Day228
		Day229	Day230	Day231	Day232
		Day233	Day234	Day235	Day236
		Day237	Day238	Day239	Day240
		Day241	Day242	Day243	Day244
		Day245	Day246	Day247	Day248
		Day249	Day250	Day251	Day252
		Day253	Day254	Day255	Day256
		Day257	Day258	Day259	Day260
		Day261	Day262	Day263	Day264
		Day265	Day266	Day267	Day268
		Day269	Day270	Day271	Day272
		Day273	Day274	Day275	Day276
		Day277	Day278	Day279	Day280
		Day281	Day282	Day283	Day284
		Day285	Day286	Day287	Day288
		Day289	Day290	Day291	Day292
		Day293	Day294	Day295	Day296
		Day297	Day298	Day299	Day300
		Day301	Day302	Day303	Day304
		Day305	Day306	Day307	Day308
		Day309	Day310	Day311	Day312
		Day313	Day314	Day315	Day316
		Day317	Day318	Day319	Day320
		Day321	Day322	Day323	Day324
		Day325	Day326	Day327	Day328
		Day329	Day330	Day331	Day332
		Day333	Day334	Day335	Day336
		Day337	Day338	Day339	Day340
		Day341	Day342	Day343	Day344
		Day345	Day346	Day347	Day348
		Day349	Day350	Day351	Day352
		Day353	Day354	Day355	Day356
		Day357	Day358	Day359	Day360
		Day361	Day362	Day363	Day364
		Day365	Day366	Day367	Day368
		Day369	Day370	Day371	Day372
		Day373	Day374	Day375	Day376
		Day377	Day378	Day379	Day380
		Day381	Day382	Day383	Day384
		Day385	Day386	Day387	Day388
		Day389	Day390	Day391	Day392
		Day393	Day394	Day395	Day396
		Day397	Day398	Day399	Day400
		Day401	Day402	Day403	Day404
		Day405	Day406	Day407	Day408
		Day409	Day410	Day411	Day412
		Day413	Day414	Day415	Day416
		Day417	Day418	Day419	Day420
		Day421	Day422	Day423	Day424
		Day425	Day426	Day427	Day428
		Day429	Day430	Day431	Day432
		Day433	Day434	Day435	Day436
		Day437	Day438	Day439	Day440
		Day441	Day442	Day443	Day444
		Day445	Day446	Day447	Day448
		Day449	Day450	Day451	Day452
		Day453	Day454	Day455	Day456
		Day457	Day458	Day459	Day460
		Day461	Day462	Day463	Day464
		Day465	Day466	Day467	Day468
		Day469	Day470	Day471	Day472
		Day473	Day474	Day475	Day476
		Day477	Day478	Day479	Day480
		Day481	Day482	Day483	Day484
		Day485	Day486	Day487	Day488
		Day489	Day490	Day491	Day492
		Day493	Day494	Day495	Day496
		Day497	Day498	Day499	Day500
		Day501	Day502	Day503	Day504
		Day505	Day506	Day507	Day508
		Day509	Day510	Day511	Day512
		Day513	Day514	Day515	Day516
		Day517	Day518	Day519	Day520
		Day521	Day522	Day523	Day524
		Day525	Day526	Day527	Day528
		Day529	Day530	Day531	Day532
		Day533	Day534	Day535	Day536
		Day537	Day538	Day539	Day540
		Day541	Day542	Day543	Day544
		Day545	Day546	Day547	Day548
		Day549	Day550	Day551	Day552
		Day553	Day554	Day555	Day556
		Day557	Day558	Day559	Day560
		Day561	Day562	Day563	Day564
		Day565	Day566	Day567	Day568
		Day569	Day570	Day571	Day572
		Day573	Day574	Day575	Day576
		Day577	Day578	Day579	Day580
		Day581	Day582	Day583	Day584
		Day585	Day586	Day587	Day588
		Day589	Day590	Day591	Day592
		Day593	Day594	Day595	Day596
		Day597	Day598	Day599	Day600
		Day601	Day602	Day603	Day604
		Day605	Day606	Day607	Day608
		Day609	Day610	Day611	Day612
		Day613	Day614	Day615	Day616
		Day617	Day618	Day619	Day620
		Day621	Day622	Day623	Day624
		Day625	Day626	Day627	Day628
		Day629	Day630	Day631	Day632
		Day633	Day634	Day635	Day636
		Day637	Day638	Day639	Day640
		Day641	Day642	Day643	Day644
		Day645	Day646	Day647	Day648
		Day649	Day650	Day651	Day652
		Day653	Day654	Day655	Day656
		Day657	Day658	Day659	Day660
		Day661	Day662	Day663	Day664
		Day665	Day666	Day667	Day668
		Day669	Day670	Day671	Day672
		Day673	Day674	Day675	Day676
		Day677	Day678	Day679	Day680
		Day681	Day682	Day683	Day684
		Day685	Day686	Day687	Day688
		Day689	Day690	Day691	Day692
		Day693	Day694	Day695	Day696
		Day697	Day698	Day699	Day700
		Day701	Day702	Day703	Day704
		Day705	Day706	Day707	Day708
		Day709	Day710	Day711	Day712
		Day713	Day714	Day715	Day716
		Day717	Day718	Day719	Day720
		Day721	Day722	Day723	Day724
		Day725	Day726	Day727	Day728
		Day729	Day730	Day731	Day732
		Day733	Day734	Day735	Day736
		Day737	Day738	Day739	Day740
		Day741	Day742	Day743	Day744
		Day745	Day746	Day747	Day748
		Day749	Day750	Day751	Day752

Spiral-up Development

Demonstration → Prototyping → Operation

Regional coordination framework

- Commonality & Priority
- Sharing knowledge, best practices
- Strengthening capability of observations, assessments and management
- Establishing a forum for promoting dialogue at all level



National coordination framework

- Locality
- Institutional arrangements
- Observations & data integration
- Natural & Socio-economic collaboration
- Communities of Practice