

PROCEEDINGS

CASITA 2 WORKSHOP

CAPACITY BUILDING IN ASIA USING INFORMATION TECHNOLOGY APPLICATIONS



CAPACITY BUILDING IN ASIA USING INFORMATION TECHNOLOGY
APPLICATIONS IN DISASTER MANAGEMENT
(CASITA 2) WORKSHOP
Bangkok-Thailand, 4-5 November 2006



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With Funding Support from the European Union



1. Introduction

CASITA (Capacity Building in Asia Using Information Technology Applications) is a project co-funded by EU Asia IT&C program and started its first phase in 2003. CASITA aims at institutionalizing graduate and postgraduate courses on the application of modern IT&C tools in Disaster Management-related curricula at university level. The project takes place in collaboration with three partners: Asian Disaster Preparedness Center (ADPC, Thailand), International Institute for Geo-Information Science and Earth Observation (ITC, The Netherlands) and Bonn University (BU, Germany). CASITA phase I ended in March 2004 and helped in establishing a network between 14 universities in Asia. CASITA II is a follow-up to the earlier project and focused support to four successful CASITA 1 network university partners, in Thailand, Indonesia, India and Sri Lanka. These universities are also partners of the existing Asian Urban Disaster Mitigation Program (AUDMP), implemented by the Asian Disaster Preparedness Center (ADPC), Bangkok.

As a follow-up to the CASITA project Phase I, several universities requested assistance from ITC, the Netherlands for the development of a course on the applications of Remote Sensing (RS) and Geographic Information Systems (GIS) for hazard assessment and risk mitigation. The target group consists primarily of faculty members of the respective universities but also of urban planners, geographers and other professionals knowledgeable of modern disaster mitigation tools. To achieve cost effectiveness in sharing knowledge, the Internet-based e-learning platform developed under the CASITA project has now been extended into a joint research and postgraduate course development on the use of RS & GIS for natural hazard and risk management.

The long-term objective of the project is:

To develop a cadre of young university professionals in Asian countries with competence in applications of modern IT&C tools in hazard mapping and mitigation for spatial planning and development to facilitate natural disaster vulnerability reduction of populations, infrastructure, critical facilities and shelters in human settlements in Asia.

The short-term specific objectives are:

- To promote research and develop a postgraduate program in the field of GIS/RS applications in natural hazard and risk assessment in several universities in Asia
- To develop a distance education course at ADPC to help practitioners aspiring to advance the knowledge and skills in application of modern disaster mitigation tools
- To advocate for increased collaboration between European and Asian academic institutions for joint academic programs, courses and distance education using modern IT&C techniques.

2. Evaluation of work done under CASITA II

The CASITA 2 Workshop was held in Bangkok, Thailand on 4-5 November 2006 with the objectives of bringing together staff from Universities in SE Asia that have interest in courses on Disaster Risk Management, with emphasis on the use of spatial information, in order to:

1. Evaluate the work done under CASITA II
 - Share experiences on course activities that have already been initiated
2. Identify measures to create sustainability of interventions under CASITA I and II
 - Support Universities that have interest in developing courses to integrate Disaster Risk Management
 - Learn about institutional needs on Disaster Risk Management Training programs
 - Learn about funding opportunities for projects and research in DRM
3. Identify follow-up actions
 - Evaluate the interest in giving the network a more permanent status
 - Define activities for the coming period

2.1. Overview of CASITA Project Phase 2

General Activities under CASITA 2:

- Kick-off workshop (Feb 2005, in Enschede)
- Work on development of postgraduate courses on Disaster Management with 4 Universities in Asian countries
- Development of joint research
- Short courses
- Development of distance education course on the use of Geoinformation for Disaster Management
- Mid term workshop
- Final workshop

2.1.1. Activities in Sri Lanka

- Participation in Tsunami Training Course in Bangkok, 28 March – April 1 2005.
- Workshop in Un. Ruhuna 27-28 June 2005
- Short training (3 months) for Chandana Gunasena in ITC
- Wijewickrama NBRO was at ITC for 3 months
- 3 NBRO staff were trained at ITC
- Several support missions to MSc Disaster Management and Geoinformation in PGIS
- UN-OOSA call for proposals (failed)
- Asia Pro Eco Post Tsunami programme (failed)
- AsiaLink proposal



2.1.2. Activities in Indonesia

- Several visits of ITC staff to UGM for discussion of joint MSc
- Workshop was held 4-6 July in UGM by ADPC
- 4 MSc students studied in ITC
- New batch of 20 students
- Support by BAPPENAS
- Fellowships from NL Government
- MOU signed between UGM and ITC
- Visiting scientists stay of UGM staff at ITC
- Support after Java earthquake



2.1.3. Activities in Thailand

- Visit to CMU 24-25 June 2005 (van Westen)
- Urban Disaster mitigation course, 9-11 April, 2005
- Visit to CMU September 2005
- Interest in joint courses also with Geology and Soils departments
- Ongoing research collaboration with LDD
- Several ITC students do research in Thailand



2.1.4. Activities in India

- Two visits in September (2005/2006) to IIRS by D. Rossiter for mid-term reviews
- Visits in January for MSc exams
- 3 months course at ITC by IIRS students in ITC
- 3 weeks stay by IIRS course coordinator
- MSc student continued for PhD
- MSc programme continues
- Celebration 40 anniversary of contacts
- Joint research



2.1.5. Capacity Building Activities organized by ADPC

- Regional Training Courses
- In-house Training Courses (National Training)
- Curriculum Development Workshop for Distance Learning
- Distance Education: Pilot testing

2.1.5.1. Regional Training Courses

- Regional Training Course on Tsunami Wave Modeling and Multi-temporal Satellite Image Processing and Analysis of the Impact of the Dec 26th 2004 Event, Bangkok, 22 March-1 April 2005



- Regional Course on Landslide Risk Management, September 2005, through funding from Norway Government under RECLAIM Project; contribution to CASITA



- Urban Disaster Risk Management Course in Chiang Mai, Thailand on 9-11 April 2005
- Course on Community-based Disaster Risk Management (CBDRM) in Faculty of Geography, Gadjah Mada University, 21-23 March 2006



- General Course on Disaster Risk Management in Ruhuna University, Matara, Sri Lanka on 2-4 May 2006
- Course on Disaster Risk Management at PGIS, University of Peradeniya on 26-27 May 2006
- Workshop on Earthquake Vulnerability Reduction and Damage and Loss Estimation, Research Center for Disaster, University of Gadjah Mada on 28 August – 2 September 2006

2.1.5.2. Distance Education Course

- First run: CASITA course in Hanoi, Vietnam, 14 – 25 November 2005
- Second run: Course on multi-hazard risk assessment in Enschede, Netherlands, from 12 April -12 May 2006
- Third run: NIDM , IIRS course in Dehradun, India, 10-14 July, with input from ITC & ADPC



2.2. Presentation of University Partners involved in CASITA Phase II

2.2.1. Indian Institute of Remote Sensing (IIRS)

There are 14 activities conducted by IIRS in the CASITA Phase II Project. They are summarized as follows:

Activity 1: Kick-off workshop of project partners

Due to administrative reasons, Project Manger of CASITA II project from IIRS Dr. V. Hari Prasad, could not attend this kick-off workshop. However after 5 weeks, Dr. V. Hari Prasad visited ITC, The Netherlands and held discussions about the project activities with Dr. Cees van Westen and agreed to extend full support for the project.

Activity 2: Needs assessment workshop of project partners and universities

IIRS was already implementing the M.Sc. programme on Geo-Hazards jointly with ITC, The Netherlands since 2003. IIRS has expressed the relevance of M.Sc. course in Indian context.

Activity 3: Implementation of a communication strategy for the project

IIRS is extending full support and co-operation in the communication strategy in the project.

Activity 4: Short course on GIS and Remote Sensing for Natural Hazard and Risk Assessment at ITC, the Netherlands

Instead of IIRS Project manager Dr. V. Hari Prasad, the short course funds were utilised for 1 M.Sc. Student Mr. Rahul Srivastava has attended this course and Dr. V. Hari Prasad participated in a GI4DM conference in Delft during 21-23 March 2005.

Activity 5: Development of guidelines for a joint research program

IIRS is conducting research in the field of Hazard & Risks as a part of the joint educational programmes. The topics of research work completed during 2005 are listed below, based on types of hazards.

Geological

- Effect of Vegetation on Debris Flow Initiation

Hydro-meteorological

- Assessment and Modeling the impact of Tsunami waves in the Nagapattinam coast of India using Geoinformation and Tsunami N2 source code
- Reconstruction of the 2003 Daya River flood, using multi-resolution & multi-temporal satellite imagery
- Drought Risk Evaluation Using Remote Sensing And GIS: A Case Study Of Gujarat
- Estimating the severity and duration of drought stress on crop production using MODIS satellite data and meteorological data

Environmental

- Earthquake Risk Assessment For Buildings - Applicability of HAZUS Model in Dehradun City, India

- Satellite Based Monitoring Of The Changes In The Mangroves And Other Vegetation Types In South Eastern Coast Of India - A Tsunami Related Study
- Evaluation of Fire Hazard and Risk Assessment in Chilla Range and its surrounds of Rajaji National Park – A Remote Sensing and GIS Approach

IIRS is conducting research in the field of Geo-hazards as a part of the joint educational programmes. The topics of research work in progress during 2006 are:

Geological

- Precipitation Threshold for Landslide Initiation and slope Characterization using Deterministic Models
- Analysis of Hydrogeological System for Waterlogging Risk in Irrigated of Thar Desert - *The Indira Gandhi Canal Project-Stage II*

Hydro-meteorological

- Hydrodynamic modeling of the 2003 Nuna River flood using terrain information obtained from remote sensing sources
- Defining a flood risk assessment procedure using a community based approach with integration of remote sensing and geographic information system – based on 2003 Orissa flood
- Flood Extent mapping – An Object oriented Image segmentation approach towards mapping the 2003 flood in the Kendrapara District, Orissa, India.

Environmental

- Damage Assessment and Monitoring the spread of damage of Sugarcane crop by Sugarcane Woolly Aphid (*Ceratovacuna lanigera* Zehnter.) in South Maharashtra
- Industrial hazard vulnerability and risk assessment for perspective land use planning of Haldia

Activity 6: Conducting landslide hazard mitigation regional course

IIRS was represented by Dr. P.K. Champati Ray at this regional course in Sri Lanka during 5-11 June 2005.

Activity 7: Conducting hazard specific courses in universities

Mr. D. Mitra and Mr. Sandeep Maithani attended the Tsunami workshop organized at ADPC, Bangkok during 28 March – April 1, 2005.

In September 2005, ITC organized a course on research skills at IIRS, Dehradun in September 2005. IIRS will organize a training programme in Landslide Hazards in January, 2007 (tentative) under RECLAIM project with ADPC.

Activity 8: Support for joint research and curriculum development in the selected universities

Based on the experience of conducting M.Sc. Course for the past 2 years, IIRS would like to review its syllabus and broad research themes with an expert committee. Task force

within IIRS constituted to review the syllabus. After proposal is ready, the same will be sent to ITC for review.

Activity 9: Development of distance education course

IIRS shared its experience in preparation of material for the distance education course.

Activity 10: Mid-term workshop

IIRS is represented by Dr. V. Hari Prasad and also Dr. Suresh Kumar attended the mid-term workshop in Hanoi, Vietnam.

Activity 11: First offer of distance education course

IIRS organised Awareness course during 10 – 14, July, 06 jointly with NIDM, New Delhi and with support of ITC and ADPC as partial distance education course for senior administrators as part of CASITA Project.

Activity 12: Adaptation of distance education course

IIRS will plan to offer the distance education course in future.

Activity 13: Marketing of distance education course

IIRS will provide full support to market the distance education course

Activity 14: Final workshop

IIRS is participating and presenting the results of the project in Final workshop in Bangkok during 4-5, Nov 2006.

2.2.2. Gadjah Mada University, Jogjakarta, Indonesia

Representing Gadjah Mada University, Dr. Sudibyakto reported three main activities conducted in Gadjah Mada University under CASITA Phase II Project, as follows:

1. Development of the MSc Course on Geoinformation for Disaster Management
2. Enhancement of Research Capacity
3. Development of a Distance Education Course

1. Development of the MSc Course on Geoinformation for Disaster Management

In September 2005, UGM established MSc Course on Geo-Information for Spatial Planning and Risk management. The course was designed for 18 months including 3 months at ITC. As continuation of the establishment of the MSc Course, two representatives from ITC, i.e. Mr. Sjaak Beerens (External Director ITC) and Drs Tom Loran (SPM ITC) visited Indonesia in January 2006 and together with Dr Hartono promoted the M.Sc joint education program

UGM-ITC to BAPPENAS. The name M.Sc course GiSPRiMa (Geo-information for Spatial Planning and Risk Management) was created.

In April – May 2006, Dr. Pramono Hadi and Dr. Junun Sartohadi visited ITC to discuss about the course structure of the MSc Course. The discussion was made with Dr. Cees van Westen (CASITA Project Director) and academic staffs involved in CASITA II Project.

2. Enhancement of Research Capacity

- Topics related with the application of Geo-information for Spatial Planning and Disaster Risk Management are very urgent need especially for Regional Development of the specific landscape : Urban Planning, Coastal Zone Area, and Volcanic area
- Quality of the Research and Human Resources Development should be enhanced continuously (ToT, Tailor-made, etc)
- Development of course and training materials (incl. soft ware) related with research development (research based education policy) should be improved

3. Development of a Distance Education Course

- GMU/M.Sc Course on GiSPRiMa has set up 22 computers with LAN and internet connection facilities.
- Provide 1 class room (capacity 30 students) with LCD, etc.
- List of the students of M.Sc Programme at GMU (2006/2007) – 20 students
- 18 students are eligible to continue study at ITC (3 months, since March 2007)

The following are recommended:

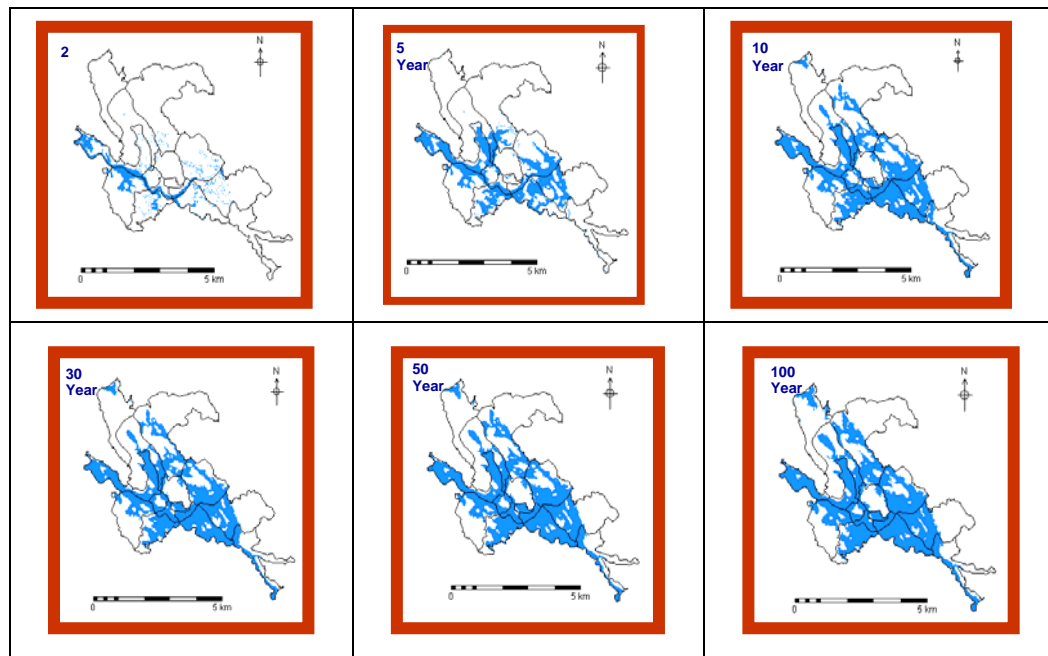
- Dissemination of the E-learning for academic staffs and M.Sc students should be supported with computer facilities/internet connection with high access system
- Development of case study (training material, thesis material during supervision, etc) are still limited
- Uploading of the modules and on going activities of M.Sc course would be improved by related institutions.

2.2.3. Ruhuna University, Matara, Sri Lanka

Achievement:

- Development of course curricula
 - o Natural Disaster Management (3 credit)
 - o Natural Hazard in Sri Lanka (3 credit)
- Development of Case Studies

- GIS applications for flood scenario mapping
- GIS applications for flood hazard zonation mapping
- GIS applications for flood risk mapping
- Flood modeling
- Tsunami hazard mapping



Staff Training Programs

- Foreign training – ITC, The Netherlands , ADPC , Thailand , Hanoi – Vietnam
- Local training – Disaster management course (CHPB, Sri Lanka), Landslide Hazard Workshop (Bandarawela, Sri Lanka)
- Staff training workshop, Department of Geography
- Student Training Program with ADPC, in Ruhuna University, 2-4 may 2006

Problems Encountered

- Data availability
- Lack of Funds
- Insufficient trained staff
- Institutional problems
- Lack of technological resources

Opportunities

- Conducting Short Courses
 - Risk assessment

- Loss and damage assessment
- Vulnerability assessment
- Hazard and risk mapping
- Specific hazards (floods, landslides, tsunami and tropical cyclones)
- Community based disaster management
- Development of course curricular for Undergraduate program: GIS and RS Application for Disaster Management Application
- Provide consultancy for national and local level institutions
 - Disaster Management Center (DMC)
 - UNEP -APELL Program (Awareness and Preparedness for Emergencies at Local Level)
 - School curricular
 - Establish a resource center for Disaster Management

2.2.4. Chiang Mai University, Chiang Mai, Thailand

Project Activities in 2006

- Developing New Subjects related to Disaster
- Developing New Master Program in Disaster Management

- Developing New Subjects related to disaster

- Undergraduate
 - 154351 Introduction to Natural Disaster
 - 154457 Natural Hazard and Risk Assessment
- Postgraduate
 - Introduction to Disaster
 - Disaster Management
 - GIS & Remote Sensing for Disaster Management
 - Geo-Informatics in Hazard Vulnerability and Risk Assessment
 - Risk Assessment
 - Vulnerabilities
 - Geological Hazard Assessment
 - Flooding and Coastal Hazard Assessment

- Developing New Master Program in Disaster Management

Discussion was conducted at the at Faculty of Social Sciences, Chiang Mai University; January 2006 with the following participants:

- ADPC representatives
- Chiang Mai University
 - Dept. of Geography

- Dept. of Geology
- Dept. of Soil Science
- Department of Disaster Prevention and Mitigation, Ministry of Interior

Curriculum Content (Master of Science in Public Disaster Management)

- Course Work minimum of 33 Credits
 - Core Courses 18 credits
 - Elective Courses 15 credits
- Independent Study 3 credits
- Total minimum of 36 Credits

Curriculum Structure

Required courses	18
PDM (155)701 Research Methodology	3 (3/3-0/0)
PDM (155)711 Introduction to Disaster	3 (3/3-0/0)
PDM (155)712 Disaster Management	3 (3/3-0/0)
PDM (155)731 GIS & Remote Sensing for Disaster Management	3 (3/3-0/0)
PDM (155)721 Principle of Administration in Public Disaster	3 (3/3-0/0)
PDM (155)796 Seminar in Disaster Management	3 (3/3-0/0)

Elective courses a minimum of	15
PDM (155)732 Geo-Informatic in Hazard Vulnerability and Risk Assessment	3 (2/2-1/P)
PDM (155)722 Public Disaster Administration	3 (3/3-0/0)
PDM (155)741 Risk Assessment	3 (3/3-0/0)
PDM (155)742 Vulnerabilities	3 (3/3-0/0)
PDM (155)797 Special Problem in Disaster Management	3 (0/0-3/P)
PDM (155)733 Geological Hazard Assessment	3 (2/2-1/P)
PDM (155)734 Flooding and Coastal Hazard Assessment	3 (2/2-1/P)
GEO (154)738 Urban Land Management	3 (3/3-0/0)
PDM (155)798 Independent Study	3
TOTAL	36

Study Plan – 1st Year

<u>1st Semester</u>	<u>Credits</u>
▪ PDM (155)711 Introduction to Disaster	3
▪ PDM (155)712 Disaster Management	3
▪ PDM (155)731 GIS & Remote Sensing for Disaster Management	3

▪ PDM (155)721	Principle of Administration in Public Disaster	3
<u>2nd Semester</u>		<u>Credits</u>
▪ PDM (155)701	Research Methodology	3
▪ Elective		3
▪ Elective		3
▪ Elective		3
Study Plan – 2 nd Year		
<u>1st Semester</u>		<u>Credits</u>
▪ PDM (155)796	Seminar in Disaster Management	3
▪ Elective		3
▪ Elective		3
<u>2nd Semester</u>		<u>Credits</u>
▪ PDM (155)798	Independent Study	3
Total Credits		36

3. Evaluation of CASITA Phase I and II Activities

To evaluate overall activities of CASITA Phase I and II, the participants were divided into four groups to discuss the following questions:

- How do you evaluate CASITA?
 - Has it been useful for you so far?
 - Did it achieve the objectives?
- What were the shortcomings?
- Do we continue with CASITA?
- What should be the focus?
- Externally driven / internally driven

The result of the discussion is summarized in the matrix below:

Question	Group 1	Group 2	Group 3	Group 4
How do you evaluate CASITA?	<ul style="list-style-type: none"> - <i>Succeeding in research capacity</i> - <i>It meets its objectives as a capacity building program</i> - <i>Overdependence on ADPC / ITC</i> - <i>Lack of clarity on (modern) technology</i> - <i>Different strengths between partners were not sufficiently shared</i> 	<i>Reasonably successful</i>	<ul style="list-style-type: none"> - <i>Good interaction between institutions</i> - <i>It generated study programs in Disaster Management</i> - <i>Further than just an IT</i> 	<ul style="list-style-type: none"> - <i>University networking through ADPC and ITC</i> - <i>Some networking only exist within the country</i> - <i>Human capacity development (a lot of trainings conducted)</i>
Has it been useful so far? <ul style="list-style-type: none"> - Did it achieve the objectives? - What were the shortcomings? 	<ul style="list-style-type: none"> - <i>Regarding courses: yes</i> - <i>Regarding research: yes</i> - <i>Distance learning: partial</i> - <i>Collaborative courses: partial</i> - <i>New IT&C methods tested and applied</i> 	<i>For short term, yes. However, it is too early to evaluate long time success</i> <i>Some shortcomings identified:</i> <ul style="list-style-type: none"> - <i>Network is not strong enough in terms of communication between partners</i> - <i>Objectives have shifted: CASITA I and II</i> - <i>Problems of implementation in beneficiary institutions (in second phase)</i> 	<i>Some</i> <ul style="list-style-type: none"> - <i>It developed case studies</i> - <i>Course curricula interactivity networking case studies</i> <i>In developing case studies, the shortcoming was lack of data, funds and staff who can undertake work</i>	<ul style="list-style-type: none"> - <i>Curriculum Development</i> - <i>More modeling should be done, which can be shared</i> - <i>Enhancement of research capacity</i>
Do we continue with CASITA?	<i>Yes, but should consider the following things:</i> <ul style="list-style-type: none"> - <i>Less IT and more GIS/RS</i> 	<i>Why not?</i>	<i>Yes but the agenda should be refined</i>	<i>Yes, but agenda and goal should be refined</i>

	<p><i>in Disaster Management</i></p> <ul style="list-style-type: none"> - <i>Not so much focused on urban matters</i> - <i>More visits among partner universities</i> - <i>Involve other universities from the region</i> - <i>Collaboration and platforms among partner universities</i> 			
<p>What should be the focus?</p>	<ul style="list-style-type: none"> - <i>Should focus on applications for planners and practitioners</i> - <i>More on Disaster Management with still focus on GIS/RS</i> 	<ul style="list-style-type: none"> - <i>Strengthen the network (discussion groups, mailing lists, infrastructure, publications, exchange of experts)</i> - <i>Building links between research inst. And planning, policy and decision making</i> - <i>Multiply the effect</i> - <i>Widening the linkage towards a larger network.</i> 	<p><i>Focus on application with:</i></p> <ul style="list-style-type: none"> - <i>Enhance IT Capability</i> - <i>Networking should be further improved</i> 	<ul style="list-style-type: none"> - <i>More focus on the research</i> - <i>Similar core modules in different countries which can be shared.</i> - <i>Quality assurance and accreditation should be focused on more.</i> - <i>Focus on research publications (peer reviewed journal)</i> - <i>Technical research seminars should be held.</i> - <i>How results are reaching to grass root level. How involve people at local level</i> - <i>Interuniversity constitution for disaster management.</i>

4. Proposed measures for achieving sustainability of interventions by CASITA I and II

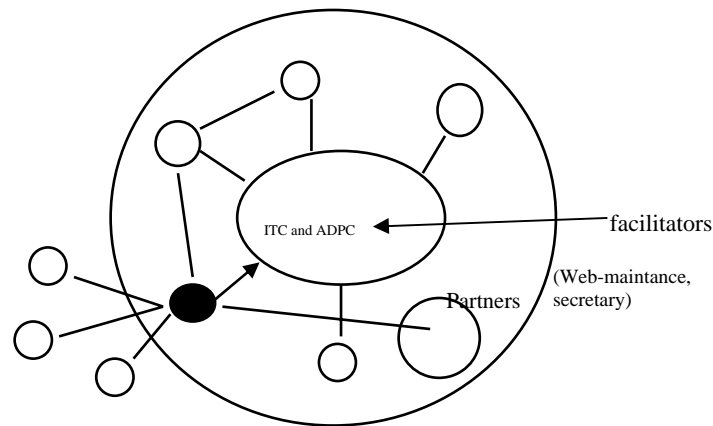
Following the evaluation discussion of CASITA I and II, proposed measures for CASITA sustainability was discussed in four different subjects by four different groups:

- Group 1: Organization of the network
- Group 2: Research collaboration
- Group 3: Short courses training collaboration
- Group 4: Post Graduate Courses

Group 1: Organization of the network

<i>Points of Discussion</i>	<i>Result of Discussion</i>
<ul style="list-style-type: none"> • Name? • Coordination? • Structure? • Formal or informal (MoU's) • Sub-networks in countries • Sub-groups on specific topics with chairpersons • Website? For what? • E-mail discussion list? • Other means to disseminate • Should we expand it further? What is optimal size? • Meetings? How often? 	<ul style="list-style-type: none"> • Name change: Yes, but retain name CASITA in some way, e.g. <ul style="list-style-type: none"> Community of Academic Sister Institutes for research Training in DRM in Asia • A formal network: Each partner formally subscribes to the objectives of the network (MoU or letter of intent) <ul style="list-style-type: none"> - With intention to actively contribute to DM - Developing and sharing of training material - Offer assistance to other partners - Look for project opportunities - Intention to visit partners when possible <p>Minimum requirements to become partner (relation DM, academic level, ...)</p> <p>Advantages of having a network: Together Stronger</p>

The proposed hub structure is like below:



Group 2: Research Collaboration

<i>Points of Discussion</i>	<i>Result of Discussion</i>
Research topics?	<ul style="list-style-type: none"> - Risk Management (Prevention, mitigations etc.) - Natural Hazards (Tsunami, Earthquake, landslide, Volcano, flood, draught, Coastal and rives bank erosion, coastal cyclone, etc.) - Technological hazards (Industrial hazards, pollution etc.) - Development of research methodology for hazard and risk management, multi-hazard scenario etc. - Community based disaster management - Early warning - Application of RS and GIS for disaster management
PhD ? Full/Sandwich/inverted sandwich	<ul style="list-style-type: none"> - It is very much possible but funding aspect has to be taken care. - All modes of Ph.D's research is possible. But again it depends on funding. - Sharing the data, availability, getting data in time and their ownership etc. - Joint supervision for Ph.D candidates. - Member of Ph.D committees from other member countries

Link MSc-PhD research	Yes, linking is possible. But the topic at Masters level can be a small part of the doctoral thesis.
Joint publications	<ul style="list-style-type: none"> - It has to be encouraged. - You have to have joint projects and provision of visiting scientists. - Funded research project for joint publications. - News letter from CASITA has to come out.
Research workshops?	<ul style="list-style-type: none"> - Very much needed amongst partners. - Technical review of the work done and quality assurance of the outputs. - Focused for development of scientific models to handle real world disaster and should be available to the partners. - Both open and closed workshop has to be performed. - How can be the CASITA representatives present the work done by all the partners?
Examination committees for MSc / PhD	<ul style="list-style-type: none"> - It should be done but within the framework of the concerned university. - Examination committees consisting of few partners institutes will enhance to scope for joint work in future.
Link research with case study development	<ul style="list-style-type: none"> - Possible but funding aspect has to be taken care. - Visiting scientists, joint research, joint supervision will enhance the possibility. - Sharing the methodology, knowledge, and data is important.
Library access / Web of Science / Science Direct?	<ul style="list-style-type: none"> - Yes, CASITA should apply to science direct for free access to the partners - CASITA partners who has the access for science direct etc. can help partners to get these.
Sharing of papers..?	<ul style="list-style-type: none"> - Yes, but copyright act has to be taken care. May be the almost final paper before sending to the journal can be shared with the partners. - May be a e-mail forum among the CASITA partners will be great help towards this.

Group 3: Short courses training collaboration

<i>Points of Discussion</i>	<i>Result of Discussion</i>
Which already planned courses can fall under CASITA	<ol style="list-style-type: none"> 1. Disaster Management Course 2. Multi-Hazard Risk Assessment 3. CBDRM 4. EVRC 5. Damage and Loss Estimation 6. Dynamic Modeling for Landslide and Flood 7. Urban Flood Modeling 8. Application of GIS and RS for DM 9. Application of RS in Coastal Hazard Studies 10. Tsunami Wave Modeling and Multi-temporal Satellite Image Processing 11. Landslide Risk Management
Inventory of short course possibilities	<ul style="list-style-type: none"> • Disaster Management and National Development Planning • Multi-Criteria Analysis for Spatial Planning and DRM • Application of GIS for <ul style="list-style-type: none"> - Health - Agriculture - Infrastructure - Land and Environmental Degradation - Emergency Response
Hosting Multi-Hazard Risk Assessment	<ul style="list-style-type: none"> - Regional → ITC + ADPC Target participants: - CASITA Partners - National → Partner Institutions (universities, DM Center) Target Participants: + Decision makers and Planners (Government Officials)
Hosting ADPC courses: FRM, CBDM, EVRC...	<ul style="list-style-type: none"> - Yes - Some adjustment in the curriculum - Case studies from the area

Distance education / distance support	<ul style="list-style-type: none"> - Most courses are delivered in home town - More to Distance Support (Based on the needs) - Based on the needs
Refresher course for alumni?	<ul style="list-style-type: none"> - Alumni of institutions (CASITA partner/s) - Alumni of CASITA courses → more advanced topics

Group 4: Postgraduate courses

<i>Points of Discussion</i>	<i>Result of Discussion</i>
Focus	broadbased with options for specialisation including thesis/dissertation.
Target group	Younger mid-level professionals – future decision makers; diverse – government, NGOs, armed services, etc.
Development of curricula	workshop to share ideas and materials, generic curriculum – core modules, with scope for adaptation to specific context.
Minimum requirements for contents	duration flexible, MSc to include research component, prefer common core courses for collaboration.
Accreditation	network role depends on language and national norms. In SAARC countries UGCs have comparable and accepted standards, among ASEAN not due to language differences.
Language	English easier to share through network, ASEAN would need translation help.
Research embedded	MSc should have research component for dissertation, may be as part of larger research project but only where it benefits students.
Joint degrees with foreign universities	Yes, but limited scope according to language.
Sharing of case studies	yes for use in courses, e.g through annual conference among network, possibly also student places.
Staff exchange (visiting lecturers)	yes, network could help this and arrange at low cost through inter-university agreements, network could have small funds to supplement university funds for travel.
Quality assurance?	reviews by regional specialists from among network partners.

Internal competition within countries?	want to encourage sharing but risk of being taken advantage of: network members should agree to identify (branding) of shared course material.
Fulltime / weekend courses?	all FT, PT, etc according to national demand.

Group 5: Project collaboration

<i>Points of Discussion</i>	<i>Result of Discussion</i>
Focus	<ul style="list-style-type: none"> - Geo-Information tools for DM for Urban and Rural - Capacity Building related to GI and DM - International Exchange/collaboration
Funding sources National Asian (e.g. ADB) Bi-lateral (e.g. International (UNDP, USAID, JICA etc.)	<ul style="list-style-type: none"> - National: NFP, NPT (the Netherlands), national educational grant commissions - Asian <ul style="list-style-type: none"> - ADB - SAARC-Colombo Plan, SAARC Fellowship - e-ASIA - Bi-lateral and International <ul style="list-style-type: none"> - Red Cross - Asia-Pro ECO - MarieCurrie Fellowship / network - USAID/OFDA - JICA - Asia Link - IDCR (Canadian) - DFID <p>(LIST TO BE COMPLETE BY PARTNERS /COLLABORATORS)</p>
Jointly apply for University Link programmes (e.g. AsiaLink from EU)	<ul style="list-style-type: none"> - YES - Institutional profile and project track record keeping - Subscribe/circulate ADPC, etc. e-News letter for project opportunities - Exchange of professionals staffs/faculties

Support each other after major disaster events in countries of Universities	<p>YES, some open statement in CASITA MoU/ framework for support and sharing information among network of organizations professionals/experts</p> <p>Asia-Link (->Tsunami) (CASITA – partners) (already happening) Kashmir Earthquake (CASITA)</p>
Link with UNOSAT, RESPONSE, MapAction etc. activities after disasters?	<ul style="list-style-type: none"> - ADPC and ITC coordination, partners/members institutions - try to use CASITA brand name for further collaboration and Marketing strategy and look for External Fund

5. Conclusion

1. CASITA network should be continued

- Converting project network into permanent network, with formal MoU's to signed by all partners
- CASITA should establish policy/ structure/ constitution in inviting new partners
- Although some workshop participants expressed that the network was overdependent on ADPC and ITC, at the same time the participants decided that ADPC and ITC were in the best position to coordinate the network and asked both organization to continue their coordinating tasks, in collaboration with a core team of 2 or three Asian universities. ADPC and ITC agreed to continue to coordinate the CASITA network. ITC agreed to provide support to continue its network through funding support for organization of activities and to do some updates on the web
- ADPC agreed to develop permanent website and will be responsible for managing its contents
- Training materials will be uploaded in blackboard

2. Further support to universities

- Through its other on-going projects, ADPC and ITC will continue to support universities in the countries of project implementations; e.g:
 - PROMISE will assist universities in PROMISE project countries in developing distance education
 - ADPC to support universities in PROMISE country projects in integrating Disaster Management course in the curriculum.
 - ADPC will conduct regional courses as well as organize national courses

- ITC will extend its support through their on-going programs and ITC UNU network.
 - ITC will help organize annual events, refresher courses and training. ADPC and ITC will find such funding
3. Application to be submitted to EU-Asia or any other funding sources for certain activities under possible Phase-III. ITC and ADPC to take the lead role in developing proposals with support from partner universities.