

## FINAL REPORT



## Capacity Building in Asia using Information Technology Applications (CASITA)



### ASIA IT&C Programme

<b>Place and date:</b>	<b>Enschede, June 30, 2004</b>
<b>Contract #:</b>	<b>ASI/B7-301/97/0126-75</b>
<b>Applicant name:</b>	<b>ITC</b>

# **CASITA FINAL REPORT**

## **a Methodology/Resources employed v envisaged**

*Methodology used compared to methodology set out in Work Plan*

*Activities carried out compared to activities set out in Work Plan*

*Resources used compared to those in budget and Work Plan*

The methodologies proposed in the project proposal are still valid after completion of the one-year project:

1. Collection and compilation of existing material: completed. Existing materials have been gathered and exchanged between the partners, put on the ITC FTP (Internet-based File Transfer Protocol) site and in the blackboard site (<http://bb.itc.nl>)
2. Joint brainstorming sessions: In August, the scheduled 2-week train-the-trainers workshop took place, with the participation of all project partners and academic staff of 14 universities involved. During these two weeks, a lot of brainstorming and discussing took place. More brain storming and planning took place during a joint activity of ITC and ADPC project staff in Nepal in September, the ITC project coordinator visit of the ENSG project team in Paris end of November, and during the final workshop in Dehradun, India.
3. Sharing of data, case studies and educational materials and methods: a website has been launched using educational software Blackboard to make the sharing of information even easier. A lot of case study materials and training materials have been placed on the blackboard site, and have also been handed out to the university staff involved on CD-ROM. The website can be found at <http://www.adpc.net/casita/Prog.html>.
4. Strengthening contacts between end-users: 14 participating universities (one more than originally planned) met and worked together during the two-week train-the-trainers session in Bangkok in August 2003, and the final workshop, held in Dehradun in March 2004. Follow-up was also given on bilateral basis, facilitated by ADPC and supported by ITC and ENSG. Although for participants the use of Internet and Blackboard was a new experience and they were a bit hesitant to fully use it, they all participated in the exchange of information through these digital platforms, and have been active in developing case studies using GIS, as well as the course curricula.
5. Peer review at final stage: during the final workshop, the project was reviewed by an external expert, Dr. David Stevens from the UN-OOSA in Vienna. Unfortunately, the other invited external expert, Dr. Carlos Villacis from Harvard University and UNESCO consultant, was not able to come to the final meeting at the last moment.

As for the activities planned compared to the actual implementation in the last quarter of the project (month 10, 11 and 12):

1. Development of GIS case studies; has been finalized according to plan and will also be continued after the end of the project. The case studies can be found on the Blackboard site at <http://bb.itc.nl> (Username: casita, password: casita). The following case studies are available on the Blackboard site:
  - Coastal hazard assessment

- Modeling cyclone hazard in Bangladesh, in a study area South of Chittagong, using data of the April 1991 cyclone
- Assessment of the Impact of Land Subsidence, Sea Level Rise and Coastal Change in the city of Semarang, Java, Indonesia
- Monitoring changes in the Yellow river delta, China.
- Earthquake hazard assessment
  - Application of GIS for earthquake hazard and risk assessment for Kathmandu, Nepal.
  - Liquefaction susceptibility assessment for the Bhuj area, India.
- Flood hazard assessment
  - Flood hazard monitoring using multi- temporal SPOT-XS imagery in the confluence area of the Ganges and Jahmuna rivers in Bangladesh, Southwest of the capital of Dhaka
- Landslide hazard assessment
  - Geographic Information Systems In Slope Instability Zonation. Case study of the Kakany area, Nepal
  - Deterministic landslide hazard zonation in Manizales, Colombia
  - Statistical landslide susceptibility assessment: landslide index method. Case study Chinchina, Colombia
  - Statistical landslide susceptibility assessment: Weights of evidence modeling . Case study Chinchina, Colombia
  - Seismic landslide hazard zonation in Manizales, Colombia
- Volcanic hazard assessment
  - Modelling erosion from pyroclastic flow deposits on Mount Pinatubo, Philippines.
- Vulnerability and risk assessment
  - GIS for annual flood risk assessment, case study Tieler-Culembergerwaard Polder , The Netherlands
  - Application of GIS for vulnerability and seismic risk assessment: Kathmandu, Nepal
  - Application of GIS for flood risk assessment in Tegucigalpa, Honduras
- Hazard assessment and urban development
  - Analysis of suitability for urban expansion in Villavicencio, Colombia
- Data base management
  - Creating an engineering geological data base for the city of Manizales, Colombia
- 2. Development of module components: completed. Seven module outlines can already be found on the Blackboard site. The following modules are under development:
  - Vulnerability reduction for cities
  - Landslide hazard assessment
  - Flood hazard assessment
  - Volcanic hazard assessment
  - Seismic hazard assessment
  - Coastal hazard assessment
  - Technological hazard & risk analysis for cities.
  - Multimedia and Hypermedia Information and Resources
- 3. Assistance to trainers: assistance has being given by direct contact (through ITC with: IIRS, Gadjah Mada) and via email. Staff from ADPC visited the following Universities and provided support:

- Bangladesh: BUET and Khulna
- Indonesia: Gadjah Mada University
- Laos: Urban Research Institute
- Pakistan: Univ of Peshawar
- Sri Lanka: Univ. of Moratuwa, Univ. of Ruhuna
- Thailand: Chaing Mai Univ.
- Vietnam: Hanoi Architectural Univ.

## **Final workshop**

A four-day closing workshop of the CASITA project was organized from 16-19 March in the Indian Institute of Remote Sensing (one of the participating targeted training institutes), in Dehradun, North of India. The workshop was attended by 18 teaching staff from 14 Universities and training institutes in Asia. The workshop was given jointly with staff from the Asian Disaster Preparedness Center (ADPC) the ENSG (Ecole National de Sciences Géographiques) from France.

The workshop was given to 18 participants from 14 Universities and training institutes from Asia. The response from the Universities was very positive. Most of them have indeed developed GIS case studies in the framework of the project, and most of them have developed course curricula on disaster management. The project was evaluated very positively and all Universities indicated that this project acted as a catalyst, triggering them to update their knowledge and learning methods and including new topics in their curricula. They would like to continue in the network, and that also in future emphasis should be given to quality assurance (e.g through peer review of case studies and course materials), exchange of staff, and joint research.

However, the level of the case studies is still rather low, and sometimes not the correct terminology and methods were used. Furthermore it was a bit disappointing to see how little the University staff had made use of the materials on the ITC CASITA blackboard site. Many of them indicated that Internet connections were generally not yet adequate enough to download data from Blackboard. They did use the materials that were handed to them on CD's, during the initial training course in Bangkok, and also most of them have used ILWIS, and considered it to be an excellent tool which they would like to continue using in their teaching

Most promising partners for further collaboration are Chiang Mai University, University of Ruhuna (Sri Lanka), Kathmandu University, and Gadjah Mada University. They were more frequent users of the Blackboard site, acted pro-actively and showed the biggest interest in the exchange of information. At the end of the course all participants received a CD-ROM with all lectures and practical materials, which are also available on the CASITA blackboard site, and a CD-ROM with all PowerPoint presentations, GIS case studies descriptions and GIS materials, from the participating Universities. A more detailed workshop report is added as annex 7.

Resources used: according to planning, for more details we also refer to the attached financial overview (annex 1).

## b Numerical Comparison of Actual v Targets

Compare results in numerical terms—actual v targets in Work Plan and Logframe as per Proposal or as prepared for Inception Report

Key Performance Indicators	Target	Actual	Comments
Kick-off workshop proceedings	1	1	Produced according to planning, see Q1 report.
Inventory of needs and opportunities	1	1	Produced according to planning, see Q1 report
Number of universities in the CASITA network	13	14	The interest from universities was overwhelming but it was decided to add one additional university to the network due to the limitations in resources.
Web-site established	1	1	Website is in place and will be further developed maintained by ADPC after the project period. Possibly it will be further used in a CASITA 2 project, for which funding has been requested from the EU Asia IT&C phase 2 programme.
E-learning platform in place	1	1	E-learning platform in Blackboard software is in place, and final case studies, module components and University information have been added. Will be further maintained and updated by ITC after the project period.
Memorandum of Understanding signed with university partners	Originally not targeted	12	During the kick-off workshop it was decided to make MoU's with all university partners, to formalize their involvement and responsibilities in the project, to strengthen the commitment of their top-level management and to have a vehicle for continued collaboration after the project period. An example of such a MoU is attached to this report.
GIS case studies developed	6	8	The majority of the participants presented their case study reports at the final workshop in March 2004. It is positive to notice that participants are not only planning to use their own developed case study but also have serious interest in using the case studies of the other university participants. The case studies mentioned to be used most are on: <ul style="list-style-type: none"> <li>• Flooding (6 times)</li> <li>• Landslides (6 times)</li> <li>• Earthquakes (2 times)</li> <li>• Land use planning (2 times)</li> </ul> An overview of all eight case studies

			developed is attached to this report, more info can be found on <a href="http://bb.itc.nl">http://bb.itc.nl</a> .
Course module components developed	7	7	<p>7 module components, most of which with links to related case study exercises, are in place and added to the blackboard site and website. These modules are:</p> <ul style="list-style-type: none"> <li>- Vulnerability reduction for cities In this folder you can find the course modules provided by ADPC on vulnerability reduction for cities</li> <li>- Earthquake vulnerability reduction for cities This course module deals with the methods for Earthquake vulnerability reduction and the use of Remote Sensing and Geographic Information Systems for this.</li> <li>- Flood vulnerability reduction This module deals with the methods for flood vulnerability reduction in cities and the use of Remote Sensing and Geographic Information Systems for flood hazard and risk assessment</li> <li>- Landslide hazard assessment This course module deals with the use of remote sensing and Geographic Information Systems for landslide hazard assessment</li> <li>- Volcanic hazard assessment This module deals with the use of Remote Sensing and Geographic Information Systems for volcanic hazard assessment</li> <li>- Coastal hazard assessment This module deals with the use of Remote Sensing and Geographic Information Systems for coastal hazard assessment</li> <li>- Technological hazard and risk assessment This folder used to contain all the materials that ENSG is sharing within the CASITA Project and was previously called "ENSG's Material"</li> </ul>
Integration of urban disaster mitigation course modules	3	10	It is very promising to see that in fact most of the universities are concretely planning to integrate one or more of the modules developed in their curricula. The following

in at least 3 universities			modules will be used the most: – Risk and vulnerability assessment (6 times) – Modeling using GIS and RS (4 times) – Landslides (3 times) – Introduction to Disaster Mitigation (3 times) – Floods (3 times)
Trained university staff members	26	26	14 universities have participated in the project. 26 of their staff members have participated in the project events and even more staff members were involved in the case study development in their own universities.
Quality assurance workshop	1	1	Performed as a component of the final workshop by external quality assurance person David Stevens (UN-OOSA). A separate report with his findings is attached as annex 6 to this final report.
Quality assurance workshop report	1	1	A workshop was produced and is attached as annex 7 to this final report.

### **c Logical Framework update**

*Updated Logframe compared to that proposed in Proposal or at Inception Report stage with final data and qualitative comments inserted*

To summarize many of our remarks made in this report, an updated Logframe including an extra column with final remarks is included herewith.

### **d Effectiveness**

*Has Management Adapted to Changing Needs?*

*Is the Level of Technical Expertise Sufficient?*

*Is the current Level of Management Capacity and Experience Satisfactory?*

*Are Deadlines met?*

*Are Reports produced on Time?*

There was no need for managerial adaptations due to changing needs.

The level of technical expertise has been sufficient, and no additional, unforeseen technical expertise was required.

The level of management capacity and experience has been satisfactory.

The applicant, ITC, was impressed by the level of effective management by the coordinating partner in Asia, ADPC. It was mutually agreed that in case a follow-up project will take place, we would rotate the final project responsibility, making APDC the applicant for the next call.

The deadlines were met and reports produced on time.

### **e Impact**

*What is the Impact on Target Groups?*

*What is the Impact on Applicant and Partners?*

*What is the Impact on the IT&C Sector?*

*Is the Project Contributing to the Achievement of the Aims of the Programme?*

**Impact on target group:** The impact of the project activities on the target group is clear; 10 universities will use the developed course materials in their own curricula and all the universities will use the case study materials, not only their own but also the case studies developed by the other university participants. The training was very much appreciated, a lot of knowledge and information is exchanged both between the European and Asian partners as between the Asian universities, the network of universities involved is further strengthened; the topic of disaster management is more prominently placed on the action agenda of these universities; and an important start has been made with the use of modern E-learning tools in the Universities. The universities are now equipped with teaching and training materials which will help them in integrating issues of urban disaster mitigation in their own academic program and to spread the information to their colleagues.

**Impact on Applicant and Partners:** the impact of the project on the Applicant, ITC, is considerable. Through CASITA, ITC has access to an active network of 14 universities all located in the target area of our activities. It enables us to connect easily with different universities and to exchange knowledge and staff for joint courses, project activities and student recruitment. Further, their newly acquired capacities in using our software tool ILWIS is a very good promotion of our institution.

The impact on ENSG was also considerable. ENSG had never before been involved in such a large university network in Asia and had made many new and valuable contacts, which helps them in developing their training materials based on real problems in the real world. In fact, the case study developed by ENSG on industrial disasters during the course of this project, will also be used by ENSG for their own students.

The impact on ADPC was also quite big. Some years ago ADPC had already started with their own network of Asian organizations involved in urban disaster mitigation (AUDMP), but with the inclusion of university partners in their wide disaster mitigation network, their capacity building efforts can finally become sustainable. Instead of struggling for the organization of new short courses each year, part of the course activities will be taken over by a number of universities in their ongoing curricula.

**Impact on IT&C sector:** it is difficult to really have an impact on the huge and powerful IT&C sector in such a short time span with such a modest budget, but at least the project has made a minimum of 14 universities known with new software tools. As for the GIS and RS software, they are now also aware that it is not always necessary to purchase expensive US-based spatial software, such as ArcInfo, but that low-budget alternative are available, such as the ITC software package ILWIS. ILWIS has perhaps fewer features than other big commercial packages, but it is perfectly suitable for training purposes at university-level. As for the use of Blackboard and distance education, it is not easy to bring about a real change in their long culture of traditional teaching within such a short on-year project, but with this project a promising start has been made.

In all these respect the project has clearly contributed to the aims of the Asia IT&C programme, building capacities in Asia by using modern IT&C tools in Asia.

## **f Sustainability**

*Has a Plan for Sustainability been produced?*



*What are the planned Multiplier Effects?  
What are the Post Project Financing Plans?  
What are the Post Project Institutional Arrangements?*

**Plan for sustainability:** as one of the outcomes of the final workshop, a plan for sustainability has been discussed, focusing on a number of action points:

- Continued maintenance and updating of shared platforms, the website and the Blackboard site. ADPC will continue to host and maintain the CASITA website and will also link the CASITA network to their ongoing network activities with AUDMP and give all access to their electronic urban disaster newsletter. ITC will continue to host the Blackboard site.
  - Multiplier effects: the ADPC website gets around 30,000 hits per month, the ITC website gets around 60,000 hits per month. The electronic newsletter goes to approximately 2600 people. The AUMDP program has 23 direct partners and 30 indirect partners, mostly municipalities.
  - Post project financing plan: low costs involved, will be bared by ADPC and ITC
  - Post project institutional arrangement: ITC and APDC take the responsibility of web site maintenance.
- Continued networking between the 14 university participants, specifically in taking up joint research activities. The University of Peshawar offered to coordinate a research forum. It is not clear yet what the multiplier effect will be, but we are hoping not only for a multiplication of joint efforts within the network but also for an expansion of the network. This can be done without the need for an external budget support, each university can bare its own research expenses.
  - Multiplier effects: multiplication of experiences and exchange of knowledge to more colleagues within the universities involved, but also expanding to other universities in their respective countries
  - Post project financing plan: low costs involved, will be bared by universities themselves.
  - Post project institutional arrangement: University of Peshawar will take the lead, ITC will provide backstopping support.
- With some of the university participants, the project partners will remain in contact through other ongoing bilateral activities to further support the development of academic programs and research in urban disaster mitigation. These universities are the Indian Institute of Remote Sensing, AIT, Gadjah Mada University and CEPT.
  - Multiplier effects: multiplication of experiences and strengthening of exchange of knowledge to more universities and staff within the universities involved, but also expanding to institutes and local/national government bodies in their respective countries
  - Post project financing plan: activities being financed out of other project resources, amongst others with financial support from the Dutch government.
  - Post project institutional arrangement: following respective project documents, with signed partnership statements between the organizations involved.

- ITC and ADPC will continue their collaboration in a number of other project activities related to urban disaster mitigation in Asia, such as the organization of short refresher courses in India and the Philippines.
  - Multiplier effects: multiplication of experiences and strengthening of exchange of knowledge to more universities and staff within the universities involved, but also expanding to institutes and local/national government bodies in their respective countries
  - Post project financing plan: activities being financed out of other project resources, amongst others with financial support from the Dutch government.
  - Post project institutional arrangement: following respective project documents, with signed partnership statements between the organizations involved.
  
- As for a possible follow-up of the project, all university participants showed interest in a continuation of the network, to continue capacity building in GIS and RS for urban disaster mitigation and start joint research. In a project management team meeting, it was decided to try to continue with a limited number of the strongest university partners and formulate a funding proposal titled CASITA II under the Asia IT&C phase 2. This proposal has been submitted under the June 24 deadline, 2004. For reasons of sustainability and transfer of responsibilities, it was decided that for CASITA II, ADPC would take over the lead from ITC. The university participants are Gadjah Mada University (Indonesia), the Indian Institute of Remote Sensing, the University of Moratowa (Sri Lanka) and Chiang Mai University (Thailand).
  - Multiplier effects: by focusing on those universities with the biggest potential and motivation for a continuation of CASITA, the multiplier effects will be much larger; more staff involved, more in-depth knowledge gained, higher quality of project outcomes and in the end more students will benefit.
  - Post project financing plan: proposal submitted for new support from the EU Asia IT&C phase 2 programme, in June 2004. The project partners will provide over 50% co-financing.
  - Post project institutional arrangement: in terms of a sustainable transfer of responsibilities from Europe to Asia in project management and coordination, it was mutually decided that ADPC would take the lead in CASITA II, taking over from ITC. As a second European partner, it was decided to change from ENSG to the University of Bonn. ENSG has a strong experience in industrial hazards. For a second phase, the university participants indicated that they would prefer to focus more on natural hazards. The University of Bonn is better qualified in this topic and therefore it was agreed by all that it would better to include BU instead of ENSG in a second proposal. Also, ENSG is at the moment in a phase of internal reorganization and preferred not to be become involved in new project activities for the time being.
  
- Another follow-up was the formulation of a proposal titled Capacity Building on Urban Land Use Planning and Environmental Management, focusing the disaster vulnerability of urban populations in Lao PDR. The project aims to

build capacity of Urban planning community in Lao PDR on land use planning approaches and usage of modern data capturing tools and is formulated at the request of the Urban Research Institute (URI) under the Ministry of Communication, Transport, Post and Construction in Lao PDR.

- Multiplier effects: multiplication of experiences and strengthening of exchange of knowledge to several organizations in Lao PDR. Lao is country where additional support is required in terms of capacity building, guidance and on-site visits. By focusing this partnership on Lao PDR, instead of Lao being a weaker partner in a larger network, the multiplication of effects will be much bigger within Lao.
- Post project financing plan: a proposal has been submitted under the EU Asia Urbs budget line in June 2004, under the leadership of ADPC and ITC and BU as partners, and URI as the main client.
- Post project institutional arrangement: following respective project documents, with signed partnership statements between the organizations involved.

**g Financial Status** (*Attach a summary of Budget/ Expenditure/ Remaining balance*)

See Annex 1

## **h. Mandatory Final Deliverables**

**The Final Report** must also comprise a set of mandatory deliverables.  
This list of final deliverables is common to all six Programme Components:

- a. Proposal on recommendations for further action, including an estimation of the time schedule foreseen.

See annex 10

- b. A short press article (+/- 500 words), describing briefly the operation, its activities and achievements, to be inserted in the Asia IT&C Newsletter and/or other publications.

See annex 9.

**The Final Deliverables** may additionally comprise:

- a. A presentation of the operation at an IT&C event.

See annex 11. This PowerPoint presentation could be presented at an IT&C event.

- b. The creation of an Internet discussion group on the Asia IT&C Web site.

This is not developed. Instead, all are invited to have a look at the CASITA website at

<http://www.adpc.net/casita/Prog.html>.

<b>Contact person:</b>	<b>Mrs. Sabine Maresch</b>
<b>Signature:</b>	

## **Annexes:**

1. Financial status report
2. Example of MOU with Universities
3. Casita participants
4. Full overview of Blackboard site.
5. List of case studies developed
6. Quality assurance report
7. Final workshop report
8. Evaluation of the project by university participants
9. Press article
10. Proposal on recommendations for further action
11. PowerPoint presentation