

Enschede - September, 2009, 23rd-25th



Knowledge providers to international organizations

Piero Boccardo, POLITO/ITHACA



Introduction Ithaca main activities

Ithaca is devoted to scientific research, delivering methodologies, analytical services and technical tools to improve the capacity of the WFP and the broader International community in **early warning, early impact assessment** and other related areas.



Introduction ITHACA

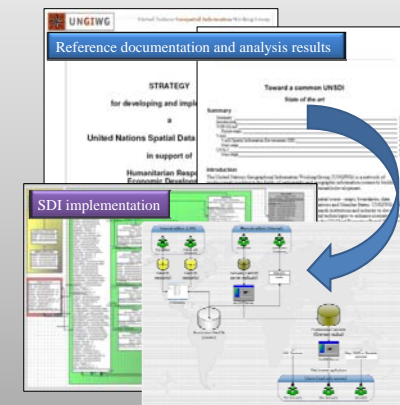
ITHACA (Information Technology for Humanitarian Assistance, Cooperation and Action) is a non-profit association, founded in November 2006 by the Politecnico di Torino and SiTI (Higher Institute on Innovation Territorial Systems).

With a view to cooperate with the UN WFP, the Association proposes itself as a center of applied research and for the distribution of products and services related to IT in support of humanitarian activities.



WFP SDI Implementation

- Is a translation of the UNSDI vision into an operational system
- It is fully compliant with UNGIWG supported standards
- It responds to the complex WFP users' requirements





WFP SDI Few numbers...

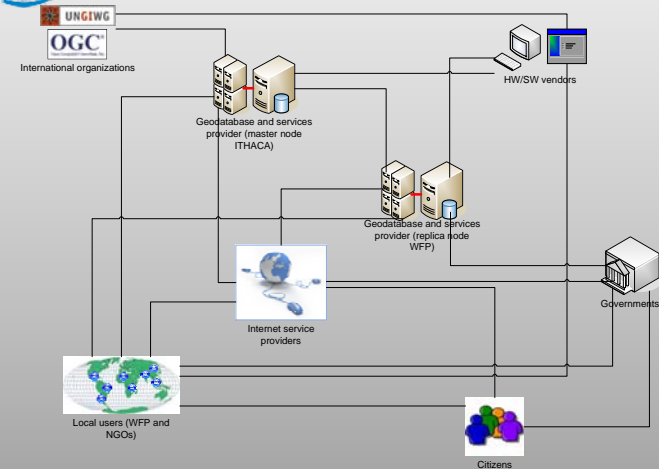
The following table contains some numbers describing the amount of data stored in the database and the activity made by the group of users in the period 03/06/2008 – 15/06/2009

	SDE	WFP	Log Cluster	ITHACA	OMEP	VAM	TOT
N. of tables	76	287	98	119	26	1	607
N. of records (rows)	44,273	28,438,391	2,241,338	12,207,764	98,919	0	43,030,685
Total disk space (MB)	238	45,298	961	5,695	815	1,024	54,031
N. of connections	-	378,798	546,572	356,460	1,408	18	1,283,256
Buffered process volumes (MB)	-	142,418	8,153	137,283	11,875	83	299,812
N. of write processes	-	622,634	12	2,070,146	71,314	0	2,764,106

5



WFP SDI Stakeholders network



6



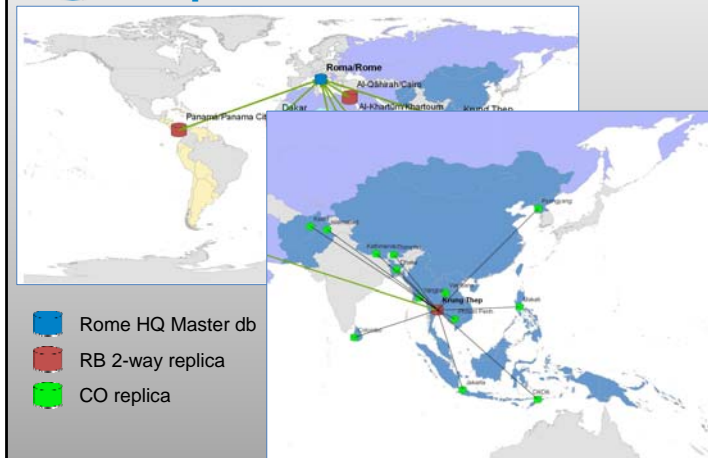
WFP SDI Network performances

WFP Regional Bureaux			
Country	City	Internet speed	Notes
Kenya	Nairobi	1.5 Mbps	ISP link shared by 11 offices country wide
Thailand	Bangkok	512 Kbps	being upgraded very soon to 1 MB
Senegal	Dakar	1 Mbps	
Uganda	Kampala	256 Kbps	
Egypt	Cairo	1 Mbps	
Panama	Panama City	2 Mbps	
South Africa	Johannesburg	384 Kbps	
Sudan	Khartoum	1 Mbps	
Zimbabwe	Harare	N/A	
Ethiopia	Addis Ababa	256 Kbps	
Chad	N'Djamena	N/A	
Zambia	Lusaka	N/A	

7



WFP SDI Replica workflow



8



WFP SDI Capacity building

- As consequence of the collaboration between ITHACA and WFP, a fruitful process of competences exchange is established;
- WFP SDI Meetings are planned at all Regional Bureaux, with the participation of GIS expert from all local offices. Those meeting are the occasion for:
 - Transferring knowledge on how the infrastructure is conceived;
 - Perform in-class practical exercise (data maintenance and system synchronization, data analysis, map production, etc.);
 - Get feedbacks from final users.
- WFP SDI Meeting calendar:
 - Bangkok: June 2009
 - Cairo: October 2009
 - Dakar: end of 2009
 - Johannesburg: end of 2009
 - Other: TBD

9

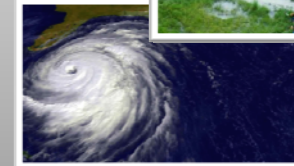


ITHACA main activities Early Impact

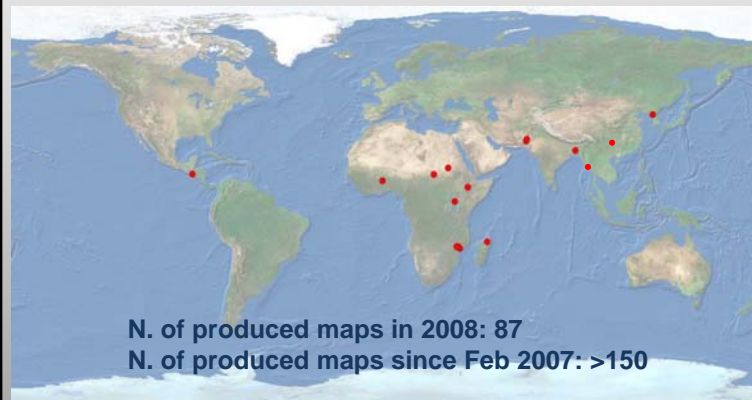
Early Impact: to rapidly determine the impact of disasters in the first hours after an event occurs (24 - 48h) and to produce georeferenced information

Main Application fields:

- floods
- cyclones/hurricanes



Early Impact Past activations



Early Impact GOALS AND PROCEDURES

Identification of:

- Affected areas
- Affected population
- Damages to infrastructures

Procedures for floods and cyclones shared with WFP





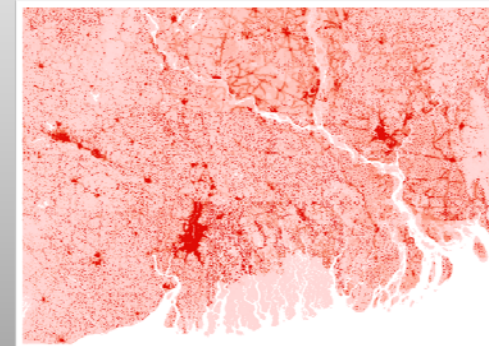
Early Impact VALUE ADDED PRODUCTS

The cooperation with the WFP country offices and the continuous feedback coming from the field allows to generate value added products strictly compliant with the requirements of the users in the field



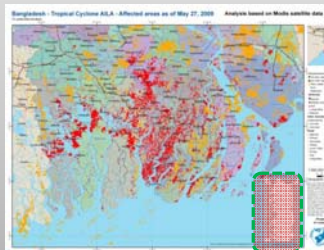
Early Impact VALUE ADDED PRODUCTS

Updated local reference datasets: i.e. Census data to have reliable affected population estimates



Early Impact VALUE ADDED PRODUCTS

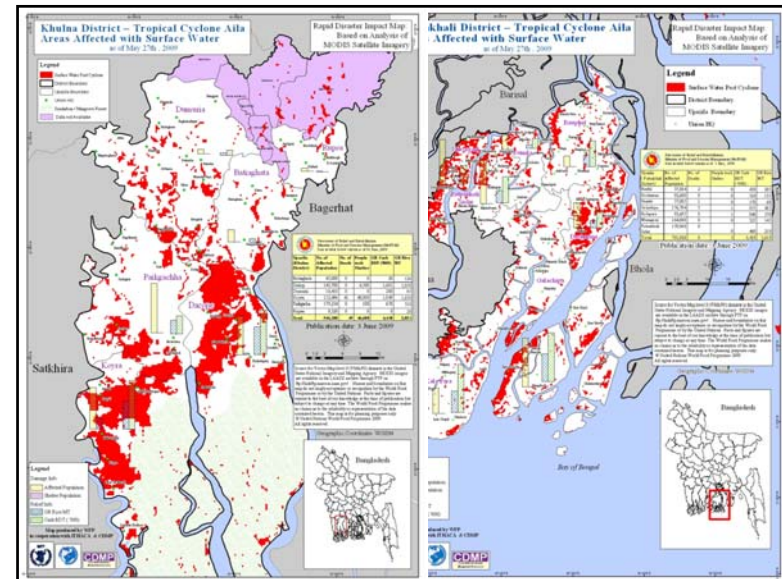
Updated local reference datasets: i.e. Census data to have reliable affected population estimates



Satellite based Ground Assessment

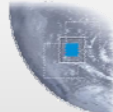
DISTRICT NAME	Estimated Affected Population
BAGERHAT	420,000
BARGUNA	390,000
BARISAL	357,000
BHOLA	128,000
CHANDPUR	93,000
COMILLA	94,000
FENI	30,000
GOPALGANJ	137,000
JESSORE	11,000
JHALOKATI	302,000
KHULNA	363,000
LAKSHMIPUR	29,000
LALMONIRHAT	13,000
MADARIPUR	2,000
MAGURA	1,000
NARAIL	5,000
NOAKHALI	116,000
PATUAKHALI	299,000
PIROJPUR	359,000
SATKHIRA	170,000
SHARIATPUR	3,000
SYLHET	7,000
TOTAL	3,469,284

Districts	Affected population	No. of deaths	People took shelter	Damaged crops (Acres)
Barisal	367,895	7	173,225	122,591
Bhola	270,983	12	173,225	16,157
Pirojpur	248,470	1	30,000	55,107
Patuakhali	615,785	8	39,400	97,998
Borgana	284,079	0	78,500	89,280
Jhalokathi	213,860	0	0	3,357
Khulna	494,900	35	109,000	5,834
Bagerhat	234,237	2	162,700	2,643
Satkhira	595,122	32	119,337	559
Chittagong	12,523	1	4,148	146
Cox's Bazar	29,795	2	13,700	0
Laxmipur	12,371	7	21,030	5,021
Feni	40,080	0	2,660	496
Noakhali	49,244	24	36,200	1,500
Total	3,469,284	131	963,065	400,689

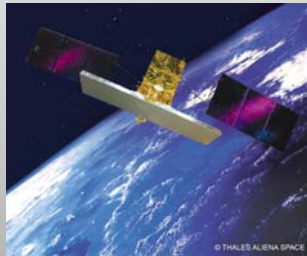




Early Impact
Cooperation with Italian Space agency



Cosmo-SkyMED



- High-resolution SAR satellite constellation
- 3 operational satellites (4 in 2010)
- Scientific and commercial applications
- Dual use: civil/defense
- Resolution up to: 1m



Early Impact
Cooperation with Italian Space agency

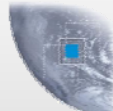


Provision of several high resolution radar images acquired by the COSMO-SkyMED satellite constellation for the emergencies occurred in:

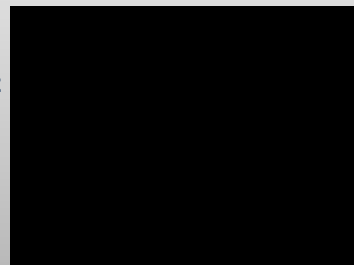
Haiti
Myanmar
Bangladesh
China



Early Impact
Cooperation with Italian Space agency



This short animation highlights the advantages offered by the COSMO-SkyMed satellites constellation in term of flexibility and revisit time. The availability of 3 operational satellites allowed to acquire 8 scenes (30 m geometric resolution) in 72 hours (May 30, 12 am - June 2, 12am) with a minimum revisit time of just 18 minutes.



Enschede - September, 2009, 23rd-25th



Knowledge providers to international organizations

Piero Boccardo, POLITO/ITHACA