ACC DAR Adapting to Climate Change in Coastal Dar es Salaam

RESULTS ORIENTED MONITORING REPORT

Grant Contract Beneficiary: ***Sapienza University of Rome***

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Associate in the Action:	***Dar City Council***
Project title:	***Adapting to Climate Change in Coastal Dar es Salaam***
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Reporting period:	***From 01/01/2013 to 30/06/2013***
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Data contribution and reviews to the successful submission of this report have been provided by all the project team members

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Individual commitment identification number:	2010/254-773
Title of the Action:	Adapting to Climate Change in Coastal Dar es Salaam
Name of Beneficiary:	DICEA Sapienza University of Rome
Name of Local Partner:	Ardhi University of Dar es Salaam (ARU)
Period Covered by this report	1st of January 2013 – 30th of June 2013

CONTRACTUAL & FINANCIAL ISSUES:

Expenditure ratio since start of the project:	73,45% in relation to the total cost of the action (as per art. 3.1 Grant Contract – BUDGET), all sources and contingencies included
Expenditure ratio since last payment (<, > 70%):	47,01% in relation to the second instalment of financing
Planned date of submission of next payment request:	1st of February 2014

Issues Arising/Corrective Measures: What constraints/problems are currently being faced? What action has been taken, and by whom, to address these? What further action is required to support effective implementation, by whom and when?

No relevant issues have arisen related to contractual and financial matters during the semester object of this report.
The second instalment of the financing was received at the beginning of June 2013.

EXECUTIVE SUMMARY:

Main results and outputs achieved during the reporting period are summarized here following.

In work package 1 "Improve Understanding in Adaptation". The activities related the WP 1 are already finished. A working paper and a video showing in detail the methodology and the results of the participatory activities performed through the Forum Theatre technique has been prepared and uploaded on the project web site.

In work package 2 "Develop Methodologies for Designing Adaptation Initiatives", three research teams are working in parallel. One team already completed the methodology to monitor Land Cover changes, using remote sensing images (land cover maps and related working papers are published into the project web site). An innovative estimation of households and population by land cover class was developed using data from the household survey and land cover classifications, which allowed for the calculation of estimates from 2002 to 2011.
Those results feed into the work of the second team, who completed the monitoring of coastal shallow watershed, to create scenarios on people's vulnerability to seawater

intrusion and identify priorities for adaptation.
The third team is working on the methodology to ensure people's participation in the goal formulation process, using back-casting scenario techniques. The results of the methodologies developed under the activities 2.1 and 2.2 and their analysis' results have been evaluated by external experts in the respective fields and presented during the two-days International Workshop organized in Rome on April 2013.

In work package 3 "Build the Capacity of Dar's Municipalities". Two cycles of residential training involving 38 officers from urban development and environment management units within DCC, the three Dar's Municipalities and Ruvu Basin Authority have been successfully carry out during the reporting period. A more tailored and technical part of the training will be performed in July addressing only some technical staff. The capacity-building will finish in the next semester with the presentation of the adaptation initiatives proposed by the institutions involved in the training during a conference organized ad hoc.

The strong commitment and the availability of the local authorities at all institutional levels involved (DCC, Dar's municipalities, community leaders and street leaders) remain an asset to secure project goals achievement.

CONTEXT (EXTERNAL FACTORS):

The development of the action did not encounter relevant constraints; there have not been changes in the project operating context during the reporting period. All the assumptions described in the log-frame have been fulfilled. In particular the following considerations should be relevant:

- The institutional commitment.
  The institutional commitment remains a strong asset to facilitate the implementation of the project activities. One key person by DCC GIS office actively participated during the international workshop in Rome. Representatives by DCC, by the three municipalities and by Ruvu Basin Authority have been successfully involved within the training.
- The partnership.
  The project management and coordination team as well as the team of young researchers did not change by the beginning of the project ensuring continuity to the overall structure and activities of the action.

MANAGEMENT (INTERNAL FACTORS):

Internal project management and coordination
The structure and the composition of the project management and coordination did not change. The joint Working Groups under WP2 carried out the activities with the achievements described in the next paragraphs. Their results have been evaluated by the Project Coordinator and the Local Coordinator; their interim reporting as well as their meetings in Dar es Salaam have been supported and monitored by the Project

Manager. The activities under WP3 have been mainly carried out by ARU with the steady support of the Project Coordination Team.
As from the beginning of the project the internal communication flow between the two partners and among the working group members took place mainly by email, by phone and by meeting each other several times in Dar es Salaam and in Rome during the semester.
Internal monitoring of the project activities has been carried out by the Project Manager on the basis of performance indicators through analysis of documentation and constant meetings with the project staff.
Accountability to EU delegation is ensured by submitting the bi-annual ROM and the annual interim narrative and financial report.
An external ROM has been carried out in May and supported by both partners.

Specific objective and results relevance and innovative activities
Project specific objectives and results remained relevant. Achievements have been reached as described in the next two chapters and in the table of the indicators annexed to this report.

Two important and unexpected results have been achieved under the activity 2.1.
Firstly, a plugin for the open-source software Quantum GIS has been developed. It relies on other open-source software (Sextante plugin, Orfeo Toolbox and SAGA) and can replace commercial software in the Land Cover classification process, making the methodology developed under this Project more affordable.
Secondly, drawing on data from land cover classifications and the households' survey conducted under the activity 1.1, a method to estimate the number of households for years in-between census time has been defined and tested. The methodology used to select the households sample for questionnaire administration in 2011 provided the data for calculating an average of the households' density per pixel for each land cover class identified. Based on these household/pixel density rates, the number of household was calculated for year 2002 and 2011. The estimates thus obtained resulted largely consistent with data from 2002 and 2012 Census at both Dar's region and municipal levels validating the methodology and confirming that a strong correlation exists between population density and land cover classes in Dar region. The methodology developed can provide a valuable alternative for demographic estimation to traditional census in fast growing African cities.

One of the most relevant results during this phase of the project was the active participation of an high number of LGAs' officers involved in the capacity-building action.

Work plan
The only one change in the third year work plan has been the postponement of the mid-term conference. The main challenge of the event is to present to the public the proposals of adaptation initiatives elaborated by the LGAs involved in the training activities. The event is foreseen to be held in Dar in September 2013 instead of June.

PROGRESS IN ACHIEVING OBJECTIVES:

Progress towards the specific objectives during the reporting period could be summarized as following.

- The activities under WP2 are addressed to the specific objective of developing methodologies for integrating adaptation activities into strategies and plans for UDEM in coastal unplanned and underserviced settlements.
  Progress achieved to date includes the calculation of an "Urban Sprawl Indicator", which allows for an easy and rapid evaluation of the expansion of low density built-up areas, over the years.
  The open source "Semi-automatic Classification Plugin" was developed for QGIS program. It allows for the affordable land cover classification as alternative to commercial software.
  An innovative estimation of households and population by land cover class was developed using data from the household survey and land cover classifications, which allowed for the calculation of estimates from 2002 to 2011.

  Those analysis are crucial to understand the relation between land cover change and seawater intrusion and to develop future scenarios on boreholes' salinization, combining trends in urban sprawl with predicted CC effects on local climate parameters. The choice to focus attention on groundwater condition was made last year as it resulted to be a major issue for the target population's vulnerability to CC.
  The monitoring of coastal shallow watershed condition was completed in March 2013 and the analysis of the current state of seawater intrusion phenomenon into Dar es Salaam's coastal aquifer and its relationships with climatic conditions and urbanization processes was performed.
  Meanwhile, the definition of the methodology to create scenarios on people's vulnerability to seawater intrusion and to identify priorities for adaptation progressed. It combines the use of a forecasting approach for developing hypotheses regarding the potential future evolution of the seawater intrusion phenomenon with a backcasting approach for defining adaptation objectives at the community level. A community-based scenario exercise will be carried out in one of the peri-urban areas target in the next semester through the participatory methodology already used under the WP1.

  The methodology for designing community based adaptation initiatives starts from the mainstreaming definition as a guiding concept for integrating CC issues into the existing Urban Development and Environment Management (UDEM) plans and programs rather that developing new specific adaptation plans.
  The development of the participatory design methodology is strictly linked to the training implemented under the activity 3.2, where the LGAs' officers are guided in the formulation of their own proposals for integrating adaptation into the daily activities and plans. Their feedbacks will be crucial to finalize the approach and identify the entry point for the exercise of participatory design of adaptation

initiatives to be performed within the activity 3.4. By doing so, a twofold result will be attained: on one hand, the LGAs' officers will be fully involved in the definition of the Project's approach, while enhancing their knowledge on mainstreaming methodologies in general; on the other, group works performed by the trainees will serve as a feasibility analysis of possible mainstreaming initiatives, thus providing indications for making more effective the design of adaptation initiatives.

- The methodologies and tools developed under WP1 and WP2 are oriented toward the WP3 objective of building the capacity of Dar's local authorities for the design of community based adaptation initiatives as part of the implementation of the NAPA action of the United Republic of Tanzania.
  The activities under WP3 specifically aim to enhance the capacities of Dar es Salaam's Local Authorities in understanding CC issues related to Dar's coastal plain and peri-urban livelihood systems; in identifying effective measures for supporting the coastal peri-urban inhabitants in their efforts to adapt to CC; and, in integrating them into existing urban development and environmental management strategies and plans.
  The capacity-building strategy developed is involving key actors within 5 local authorities in Dar es Salaam, namely the DCC, the three Municipalities and the Ruvu Basin Authority. Their active participations during the two training weeks already delivered is a strong asset for the final achievement of the WP3 objective.

PROGRESS IN ACHIEVING RESULTS:

The first expected result, a better understanding of actual and practical ways of addressing CC adaptation in coastal areas of Dar es Salaam, is already achieved by the activities successfully carried out during the past two years of the project. Validation and dissemination of the results have been done through the first International Workshop held in June 2012 in Dar es Salaam and trough several working papers. Dissemination activities completed during the reporting period include a detailed working paper "Workshop on Participatory Theatre and CC" and a video describing and showing in detail the methodology and the results of the participatory activities performed through the Forum Theatre technique uploaded on the project web site.

The second result foreseen by the project is the enhanced development of methodologies for supporting inhabitants of coastal unplanned and underserviced settlements in their efforts to adapt to CC. Major developments are described here below.
The methodology for the semi-automatic classification of Land Cover, using remote sensing images has been developed by Sapienza University. It allows to monitor Land Cover changes in Dar's settlements in relation to the years 2002, 2004, 2007, 2009 and 2011. The accuracy assessment of land cover classification is described in the

working paper: "Development of a Methodology for Land Cover Classification Validation", available on the project web site. The accuracy results confirm the reliability of the developed methodology for monitoring the built-up expansion. An overview of the methodology for land cover monitoring has been described in the working paper "Assessment of Land Cover Change Using Remote Sensing: Objectives, Methods and Results", also available on the project web site.
The "Semi-automatic Classification Plugin" for QGIS has been developed, which allows for the training area collection, and the land cover classification using several algorithms (Maximum Likelihood, Spectral Angle Mapping, Minimum Distance). To date, the plugin has been downloaded over 3,000 times. The developed plugin for QGIS is documented in the working paper "Semi-Automatic Classification Plugin for QGIS", available on the project web site. Population estimates for years 2002 to 2011 have been compared with the ones from official census 2002 and 2012, demonstrating the reliability of estimation at the regional and the municipal level. However, it was highlighted a misalignment between population growth and urban growth in Dar es Salaam, which indicate urban sprawl; this could decrease the estimation effectiveness for the next few years, because estimation is based on the relationship between land cover and household density. Also, the increasing trend of urban sprawl is highlighted by the "Urban Sprawl Indicator". The paper presented at the second International Workshop in Rome, "Investigating the Relationship between Land Cover and Vulnerability to Climate Change in Dar es Salaam", is available on the project web site.

The groundwater monitoring activity was completed in March. During the reporting period one additional in situ monitoring campaign was carried out.
The Borehole Monitoring Database is fully populated and is available on the project website for downloading.
Starting from the historical and current data (collected from all the monitoring campaigns), and following the methodology defined in the previous semester, the analysis of the salinization processes in Dar es Salaam's coastal aquifer, and their relationship with environmental parameters, related to climate variability, and anthropogenic factors, related to changes in land cover and the population's water demand, has been performed. The analysis involved the following steps: the assessment of the geological and hydrogeological sketch of the Dar es Salaam coastal plain; the seawater intrusion assessment by hydro chemical methods, through physical and chemical testing of a monitored network of representative boreholes from 2001 to 2012; the analysis of climatic and anthropogenic influences on hydrogeological dynamics through investigations on piezometric surface and Active Groundwater Recharge temporal evolutions; the development of qualitative hypothesis for seawater intrusion trends related to the possible evolution of climatic and non-climatic factors.
The results were reported in the 1st draft of the working paper "Analysis of the sensitivity to seawater intrusion of Dar es Salaam's coastal aquifer with regard to climate change".
In February, the junior research from ARU who coordinated the boreholes monitoring campaign conducted an internship at SAPIENZA focusing on hydrogeology and

geochemistry issues, specifically as regards seawater intrusion theory, and on groundwater data analysis.
The results of the analysis conducted under the whole WP3 have been submitted to external evaluation by EU and EAC experts and presented for validation and discussion at the International Workshop organized in Rome as one of the foreseen project activities on April 2013. All the materials related to the International Workshop "Towards Scenarios for Urban Adaptation Planning-Assessing seawater intrusion under climate and land cover changes in Dar es Salaam, Tanzania" including papers, presentations and video recording are published on the project website.

As regards the methodology for designing community based adaptation initiatives on one hand some already consolidated approaches for mainstreaming have been identified and described in the review paper "Mainstreaming Literature Review for the Design of a Mainstreaming Strategy" published in the web site. On the other hand the training involving the LGAs' officer provided the opportunity for discussing and testing a range of mainstreaming strategies with them. The LGAs' officers proposals for integrating adaptation into the daily activities and plans are at the moment under definition. They will be the basis to finalize the methodology and the starting point for the exercise of participatory design of adaptation initiatives to be performed within the activity 3.4.

As regards the third project result "Enhanced capacities of Dar's municipalities in understanding CC issues, designing adaptation activities and integrating them in their UDEM strategies and plans" during the reporting period two weekly sessions of residential training have been held in Morogoro. The selection of the participants took place in agreement with the LGAs' directors. The target group are those officers dealing with issues pertinent to climate change adaptation and environmental planning and management coming from the DCC, the three Dar's municipalities and Ruvu Basin Authority. Nowadays 38 officers have been involved in the first week and 35 in the second week of training. A more tailored technical training will be conducted in July. During the next months the adaptation proposals delivered by the participants during the training sessions will be evaluated and presented in a conference in Dar es Salaam.

Dissemination of the results achieved during the reporting semester has been already underlined above. Other dissemination activities carried out during the semester are the following:

- The project web site http://www.planning4adaptation.eu has been updated with the latest materials in its section "Dissemination". The new page "Knowledge" has been created.
- The project activities and its results have been disseminated by the project team participating in some national and international events, and presenting articles for publication:
    - Benchmark International Workshop in the *Urban Studies* Journal Seminar Series "Bearing the brunt of environmental change: understanding climate

adaptation and transformation challenges in African cities", "*Land cover change and demographic growth: an estimation of Dar es Salaam's population using remote sensing,* Luca Congedo, "*Building knowledge for climate change adaptation in coastal peri-urban Dar es Salaam, Tanzania",* Silvia Macchi and Gabriel Kassenga, "*Exploring coping strategies for supporting autonomous adaptive capacity in Dar es Salaam",* Liana Ricci, 16-17 April 2013, Royal Holloway, University of London, UK

- Tyndall Centre's 3rd annual Ph.D. Conference "Climate Transitions. Connecting People, Planet & Place", "*Backcasting scenarios for adaptation to climate change: the case of Dar es Salaam (Tanzania)",* Giuseppe Faldi, 3-5 April 2013, Sustainable Places Research Institute, Cardiff University, UK
- Conference "Il consumo di suolo: lo stato, le cause e gli impatti", "*Adattamento autonomo come causa di crescita del periurbano"* Silvia Macchi, 5 February 2013, ISPRA, CRA and DICEA, Sapienza University of Rome, Italy
- XVI Conferenza Nazionale Società Italiana Urbanisti (SIU) 2013, "*Urban Sprawl e Adattamento al Cambiamento Climatico: il caso di Dar es Salaam*", Luca Congedo, Silvia Macchi, Liana Ricci, Giuseppe Faldi, and "*L'analisi di scenario per l'adattamento al cambiamento climatico: definire un progetto di sostenibilità per la città sub-Sahariana*", Giuseppe Faldi, 9-10 May 2013, Naples
- 4th UNICA - Santander Group - Compostela Workshop: "Exploring academic collaboration between European and Sub-Saharan universities", "*Europe-Africa Academic Cooperation: the ACC DAR project*", Silvia Macchi and Daniela Magrini 4 June, University of Kent - Brussels Campus, Brussels

- The book "*Climate Change in Southern African Cities: Building Knowledge for Adaptation*", M. Tiepolo and S. Macchi, eds., Springer, is in press.
- The Borehole Monitoring Database has been uploaded on the web site for public use.
- Project brochure were distributed during the second International Workshop, held in Rome in April 2013.

EU visibility has been ensured during the activities implementation and for each of the above mentioned dissemination outputs following the rules of the "Communication and Visibility Manual for European Union External Actions" (EuropeAid, 2010)

PROGRESS IN CROSS-CUTTING ISSUES:

The action pays special attention mainly to three cross-cutting objectives: environmental protection, promotion of gender equality and equal opportunities and good governance.

- As regards the environmental issues, the whole action is based on the purpose of ensuring the environmental sustainability of adaptive measures and strategies.

The target groups of the action are those living in coastal unplanned and underserviced settlements whose livelihood is strictly depending on natural resources. The protection of natural resources is one of core elements of the "vulnerability" concept. By drawing on people's daily experience, the data collected during the household survey combined with land cover classification provided a better understanding of adaptive capacity distribution across Dar's coastal plain. Findings in terms of autonomous adaptation strategies explored further through the participatory cycles provided a better understanding of the impact of access to land and access to water on household adaptive strategies.

- Women's concern about CC impacts as well as gender aspects of adaptation have been taken into account as a fundamental piece of knowledge. Equal participation of men and women has been ensured in the Forum Theatre events and in the training activities.
  Furthermore women hold prominent positions in the action management (i.e. Project Coordinator, Project Manager, research staff member of the working groups).
- DCC and municipalities' involvement in the project was ensured by the beginning of the project. Their availability, commitment and willingness to collaborate is essential to guarantee the effectiveness of the project results and the consistency with their strategies and the local institutional framework. During the training also the Rivu Basin Authority has been involved.

ISSUES FACED/CORRECTIVE MEASURES:

The two major surveys conducted within the monitoring campaign have required an effort for laboratory analysis greater than anticipated. In addition, it has been necessary to replace a number of boreholes previously selected because not more accessible or working during the monitoring campaign, which required a supplementary effort for the monitoring teams. Consequently, one minor survey and tidal effect survey were cancelled. However these changes did not jeopardize the possibility of achieving the foreseen meaningful results in data interpretation.

The involvement of the LGAs' officers from urban planning and environmental departments represented the main challenge of this phase of the project. Their participation during the two residential weeks of training was really active and successful. The high number of officers involved (38) caused some delays in the organization of the training weeks due to their availability. The whole capacity-building will continue during the next semester with the last part of the training activities and with the organization of the conference aiming to present to the public the proposals of adaptation initiatives elaborated by the LGAs involved.

VALID COMMUNICATION PLAN: YES ■ NO □
ANNEX: RESULTS TRACKING TABLE

RESULTS-TRACKING TABLE

Summarise state of progress since the start of the project towards delivering the action expected results.
Compare progress against plans, using log-frame indicators as appropriate.
State whether original OVIs are not applicable any longer and suggest most appropriate SMART indicators.

Result Description	Result Indicator (OVI)	Target	Performance Rating (Red, Yellow, Green)	Progress/Arising Issues	Action Required by the which implementing partner/s
1.1 Livelihoods of population dependent on natural resources and their concern for CC investigated	N. households questionnaire administered/ Households questionnaire validated in the data entry	6000/5885	Traffic Light		
	N. people involved in the Data Analysis training course	26	Traffic Light		
	N. Data Analysis Methodologies implemented	3	Traffic Light		
1.2 Dar's institutional activities related to CC investigated	N. officers participating in the kick off meeting	10	Traffic Light		
	N. officers interviewed	48	Traffic Light		
1.3 Local options of autonomous adaptation and raise awareness on CC explored	N. people involved in the feasibility study	28	Traffic Light		
	Participatory cycles realized	2	Traffic Light		

	N. people involved in the participatory cycles	At least 100 people for each cycle	Traffic Light	Almost 400 people involved in the first participatory cycle held in March 2012. Almost 500 people involved in the second cycle held in September 2012	
1.4 1st International Workshop organized	N. Background papers	2	Traffic Light		
	N. papers presented	4	Traffic Light		
	N. people attending the workshop	10 researchers from each university partner country (Tanzania and Italy); 3 seniors from EU universities; and 3 seniors from EAC/SADC universities	Traffic Light	4 senior researchers from EU universities and 2 from EAC/SADC universities	
2.1 Methodologies for monitoring changes in peri-urban settlements developed	N. methodologies developed for monitoring Land Cover changes	1	Traffic Light	2 (two similar methodologies, respectively for LANDSAT images and SPOT images)	
	N. LANDSAT images acquired/ N. LANDSAT classifications/ N. LANDSAT images processed	5 images acquired / 5 classifications/ 5 images processed (period 2002-2010)	Traffic Light	6 images acquired / 6 classifications/ 6 images processed (period 2002-2012)	
	N. Landscape Metrics Indices calculated for Land Cover change analysis	8	Traffic Light		

	N. people involved in the training short course on land cover classification and landscape metrics analysis	20	Traffic Light	It will be provided in the 6th semester	SAPIENZA
	N. methodologies developed for Land Cover validation	1	Traffic Light		
2.2 Methodologies for exploring CC vulnerability scenarios, as regards seawater intrusion phenomenon, developed	N. methodologies for conducting groundwater monitoring campaigns in Dar's coastal plain/ N. georeferenced boreholes / N. boreholes selected for the monitoring network	1 methodology/ 133 georeferenced boreholes/ 90 boreholes selected for the monitoring network	Traffic Light		
	N. groundwater monitoring activity conducted	1	Traffic Light	2 major monitoring campaigns/surveys (long term activity) have been carried out. 3 minor monitoring campaigns/surveys (monthly activity) have been carried out.	
	N. methodologies for the analysis of seawater intrusion / N. maps produced	1 methodology / 9 maps (SWL maps, EC maps, Seawater intrusion maps for 1997, 2002, 2012)	Traffic Light	Sectors affected by seawater intrusion 2001-2012; Evolution of groundwater table 2003-2012; Evolution of EC, TDS and Cl values 2001-2005-2012; Groundwater Active Recharge evolution estimation 2002-2020; Groundwater exploitation evolution estimation 2002-2011	
	N. methodologies for exploring vulnerability scenarios under	1 methodology	Traffic Light	The methodology for exploring	SAPIENZA & ARU

	climate change / Number of scenarios explored	 3 scenarios explored		vulnerability scenarios under CC has been partially defined. The scenarios will be built within the community scenario exercise that will be developed in the next semester	
	N. methodologies for investigating Land Cover Change correlation with Climate Change	1	Traffic Light	The scenarios will be built once the survey activity has finished	
2.3 Methodology for designing community based adaptation initiatives developed	N. of methodologies for designing community based adaptation initiatives Toolkit for the design methodology	1 methodology 200 copies	Traffic Light	The methodology is partially defined. The toolkit will collect the methodologies from 2.1 and 2.2	SAPIENZA & ARU
2.4 2nd International Workshop organized	N. Background papers	2	Traffic Light	3	
	N. papers presented	4	Traffic Light	5	
	N. people attending the workshop	10 researchers from universities of each partner country (Tanzania and Italy); 3 seniors from EU universities; and 3 seniors from EAC/SADC universities	Traffic Light	24 persons in the indoor session on 20th April 2013; Almost 100 persons in the opendoor session on 22nd April 2013	

3.1 Capacity building strategy prepared	N. Need assessment report of the training needs of municipal staff	1 need assessment	Traffic Light		
	N. Officers involved in the need assessment	At least 40	Traffic Light	50	
	N. capacity-building action plan	1	Traffic Light		
3.2 Training programme developed and implemented	N. learning curricula / N. evaluation procedures	2 learning curricula / 1 evaluation procedure	Traffic Light	2 learning curricula finalized. 1 evaluation procedure under development	ARU & SAPIENZA
	N. Training resource book	1	Traffic Light	Background and training material has been prepared for the training modules	ARU & SAPIENZA
	N. Officers involved in the training	20	Traffic Light	38 officers participated during the first training week; 35 officers participated during the second training week	ARU & SAPIENZA
3.3 Mid term International Conference organized	N. submitted papers	12	Traffic Light		ARU & SAPIENZA
	N. People attending the Conference	100	Traffic Light		ARU & SAPIENZA
	N. Press release	At least 2	Traffic Light		ARU & SAPIENZA
3.4 Dar's municipalities supported in designing adaptation initiatives	N. Adaptation initiatives designed	At least 4	Traffic Light		ARU & SAPIENZA
3.5 3rd International Workshop organized	N. Background papers	2	Traffic Light		SAPIENZA & ARU

	N. papers presented	4	Traffic Light		SAPIENZA & ARU
	N. people attending the workshop	10 researchers from universities of each partner country (Tanzania and Italy); 3 seniors from EU universities; and 3 seniors from EAC/SADC universities	Traffic Light		SAPIENZA & ARU
Dissemination results	N. scientific papers submitted to academic journals	At least 2 related to the result 1.1; At least 1 related to the result 1.2; At least 3 related to the result 2.1; At least 3 related to the result 2.2	Traffic Light	1 published and 1 in press 1 in press 1 published and 2 in press 4 in press	SAPIENZA & ARU
	N. evaluation reports	6 (2 evaluation reports for each international workshop)	Traffic Light	2 evaluation report already produced for the 1st international workshop; 2 evaluation report already produced for the 2nd international workshop	SAPIENZA & ARU
	N. Proceedings (international workshop and conference)	4 proceedings (1 for each international workshop and 1 for the international conference)	Traffic Light	Proceedings of the second international workshop are under preparation	SAPIENZA & ARU

	N. Booklets reporting on designed adaptation initiatives	500 copies	Traffic Light		SAPIENZA & ARU
	N. Posters on the identified adaptation initiative	100 copies	Traffic Light		SAPIENZA & ARU
	N. Web sites	1 web site with a public and a reserved area	Traffic Light	Updating of the contents during the whole project	SAPIENZA
	N. Promotional material kit	1 brochure + 1 bag + 1 CD Rom	Traffic Light	Pen-drive has been produced instead of CD Rom for both international workshops (in Rome and in Dar) Also t-shirt and posters have been produced for dissemination and visibility during participatory cycles	