



## **RESULTS ORIENTED MONITORING REPORT**

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

Contact Person: ***Prof. Silvia Macchi***

Partner in the Action: ***Ardhi University Dar es Salaam***

Associate in the Action: ***Dar City Council***

Project title: ***Adapting to Climate Change in Coastal Dar es Salaam***

Project acronym: ***ACC Dar***

Contract number: ***2010/254-773***

Project duration: ***01/02/2011 – 31/08/2014***

Reporting period: ***From 01/01/2014 to 30/06/2014***

Author(s): ***Laura Fantini, Project Manager  
Sapienza University of Rome***





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	1 <sup>st</sup> of January 2014 – 30 <sup>th</sup> of June 2014

**CONTRACTUAL & FINANCIAL ISSUES:**

Expenditure ratio since start of the project:	91% in relation to the total cost of the action, all sources and contingencies included
Expenditure ratio since last payment (<, > 70%):	100% in relation to the third instalment of financing
Planned date of submission of next payment request:	1 <sup>st</sup> of October 2014

No relevant issues have arisen related to contractual and financial matters during the semester object of this report.

The third installment of the financing was received at the beginning of July 2013.

The project duration will end on 31<sup>st</sup> August 2014.

**EXECUTIVE SUMMARY:**

The reporting period rests in the final phase of the project implementation. It refers in particular to the finalization of the activities foreseen under working packages (WP) 2 “*Develop Methodologies for Designing Adaptation Initiatives*” and WP3 “*Build the Capacity of Dar’s Municipalities*”.

More in detail, under the WP2 the scenario-based methodology devoted to support communities and local authorities in various aspects of the adaptation planning process was finalized on the basis of the results drawn from the community-based scenario exercise carried out in Kigamboni in September 2013.

In parallel, in order to provide a strong scientific basis to scenario building activities, an evaluation of the CC effects on precipitation pattern changes under global warming scenarios in Dar es Salaam coastal area have been carried out through statistical downscaling models.

As regards the WP3, a mainstreaming approach has been adopted as a guiding principle to develop the methodology for designing adaptation initiatives at municipal level. Accordingly, during the reporting period four Urban Development and Environment Management (UDEM) local plans have been analysed following the guidelines developed last year for mainstreaming CC adaptation and resting on the input provided by the LGAs’ officers during the workshop held in Dar es Salaam on



September 2013.

The results achieved under the WPs 2 and 3 have been evaluated by external experts in the respective fields and presented to a wider public during the two-days International Workshop held in Dar es Salaam on June 2014.

#### **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 institutional commitment and the availability of the local authorities at all institutional levels involved (DCC, Dar's municipalities, community leaders and sub-ward leaders) remain an asset that facilitated the implementation of the project activities and secured the project goals achievement.

The community-based scenario exercise held in Kigamboni was authorized by the local officers in each sub-ward involved. Furthermore, they remained available for in-depth interviews useful to complete the analysis undertaken.

The relationship with Temeke municipality has been strengthened during the last semester leading to the design of a new proposal for a possible future collaboration. A large delegation from the municipality including the Director participated to the third International Workshop held in June.

Community involvement has proven to be successful during all the participatory activities carried out during the whole project duration (in particular under WP1 and WP2)

The partnership between Sapienza and Ardhi University has been strengthened more and more during the whole project duration. An asset was the fact that the project management and coordination team as well as the team of young researchers involved did not change from the beginning of the project ensuring continuity to the overall structure and activities of the action.

Two new proposals have been designed for future joint collaborations.

Networking has been strengthened locally sharing project results with experts, other relevant institutions (both universities and governmental ones) and organizations working on similar initiatives in Dar es Salaam.

#### **MANAGEMENT (INTERNAL FACTORS):**

The structure and the composition of the **internal project management and coordination** did not change. The activities of the joint working groups have been supported and monitored by the Project Manager; their achievements have been evaluated by the Project Coordinator and the Local Coordinator.

Internal monitoring of the project activities has been carried out by the Project Manager. Accountability to EU delegation is ensured by submitting the bi-annual



ROM reports and the annual interim narrative and financial report.

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.

**Work plan**

Accordingly with the extension of the project duration approved last year all the project activities will end within 31<sup>st</sup> of August 2014.

**PROGRESS IN ACHIEVING OBJECTIVES:**

The activities under **WP2** aimed at developing methodologies for integrating adaptation activities into strategies and plans for UDEM in coastal unplanned and underserved settlements. Progress achieved during the reporting period includes the finalization of a methodology for participatory scenario building, that can be used for supporting local CC adaptation planning in order to take into account the community's development objectives as well as the factors that influence their potential to reach such objectives.

The implementation architecture of the project foresees that all 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. Progress achieved during this semester includes the testing and improvement of the methodology for adaptation mainstreaming outlined in the previous project period, thus providing Dar es Salaam's local government departments with a tailored tool for integrating CC concerns and related adaptation objectives into the plans and programs which currently shape their daily responsibilities.

**PROGRESS IN ACHIEVING RESULTS:**

The activities carried out during this semester contributed to the final achievements related to the WP2 and WP3.

Final result foreseen by the **WP2** is the enhanced development of methodologies for supporting inhabitants of coastal unplanned and underserved settlements in their efforts to adapt to CC. The analysis of the community-based scenario exercise, carried out in several peri-urban sub-wards in Kigamboni using the Forum Theatre techniques, led to the following main achievements:

- the definition of socially shared adaptation objectives focused on the community's development aspirations (rather than extrapolating them from a context-neutral vulnerability assessment);
- the identification of the potential challenges to achieve the shared objectives and the specific actions and strategies proposed by the community to overcome those challenges;
- the definition of criteria to evaluate potential adaptation options on the basis of the community's aspirations, problems, conflicts, and proposals.



The results of the pilot exercise demonstrated that the use of a participatory backcasting approach for defining adaptation objectives at the community level can effectively support communities and local authorities in various aspects of the adaptation planning process.

As regards the third project result under **WP3**, “enhanced capacities of Dar's municipalities in understanding CC issues, designing adaptation activities and integrating them in their UDEM strategies and plans”, four local plans, namely the Master Plan, the Temeke Municipal Council’s Strategic Plan, the Water Supply and Sanitation Plan and the Temeke Municipal Council’s Expenditure Framework, have been assessed by Sapienza and Ardhi staff. The analysis led to identify a list of amendment options that are aimed to integrate CC adaptation needs into a number of planning provisions already in place. Recommendations are also provided for an effective implementation of the proposed amendments, including analysis of the major actors to be involved, threats and opportunities to be considered, and additional costs to be borne.

The main conclusions and recommendations drawn from the whole analysis were presented and discussed during the open session of the International Workshop “*Mainstreaming Climate Change Adaptation into Urban Development and Environmental Management Plans and Programs*” held in Dar es Salaam on 10<sup>th</sup> of June 2014. Representatives of Dar’s LGAs, international experts and civil society took part in this session.

The participatory backcasting approach and the mainstreaming methodology were discussed and evaluated by a panel of international experts invited at the restricted session of the workshop, held on 9<sup>th</sup> of June.

**Dissemination** of the results achieved has been ensured through the elaboration of the working papers available for consultation and downloading on the project web site [www.planning4adaptation.eu](http://www.planning4adaptation.eu) in the section called “*Dissemination*”.

Furthermore, during the reporting semester, the project activities and its results have been disseminated by the project team through participation at the following national and international conferences:

- XVII National Conference of the Italian Society of Urban Planners "Italian urban planning in the world", 15-16 May 2014, Polytechnic of Milan, Italy
- European Geosciences Union General Assembly 2014, 27 April - 02 May 2014, Vienna, Austria
- Tyndall Centre 4<sup>th</sup> Annual Ph.D. Conference "Research in Practice: Addressing Speed, Scale and Scope", 23-25 April 2014, University of Manchester, UK
- I Annual Conference "Esperienze e Conoscenze. Progetti Internazionali nei Paesi Emergenti", 4 February 2014, Centro PVS, Sapienza University of Rome, Italy

Part of the project results contributed to the publication of a book in collaboration with Polytechnic of Turin: “*Climate Change Vulnerability in Southern African Cities. Building Knowledge for Adaptation*”, Macchi, S., Tiepolo, M. (Eds.), 2014, *Springer Climate Series*



A toolkit that collects the materials and systematizes the methodology of the whole training carried out during the third year project is under elaboration. It will aim to facilitate future improvements and replication of the capacity-building initiative.

Furthermore, a booklet that summarizes the main project results for dissemination is under elaboration.

**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:**

Since the beginning of the action special attention has been paid to three cross-cutting objectives: environmental protection, promotion of gender equality and good governance.

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 dwellers living in coastal unplanned and underserviced settlements whose livelihood is strictly depending on natural resources (called in the action *peri-urban* areas). The protection of natural resources, in particular groundwater, is one of the core elements of the “vulnerability” concept.

The monitoring of coastal shallow watershed condition, the assessment of the current state of seawater intrusion phenomenon into Dar es Salaam’s coastal aquifer and its relationships with climatic conditions and urbanization processes provided a better understanding of the potential impacts of environmental changes on groundwater condition, that is a major issue for the target population’s vulnerability to CC.

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 during the forum theatre events, in the composition of the sample size in data collections and within the training activities.

Furthermore women hold prominent positions in the action management.

**LGAs’ involvement** was secured in all the key steps of the project implementation. Their availability, commitment and willingness to collaborate were crucial to ensure the effectiveness of the project results and the consistency of the project activities with their own strategies and institutional framework.

### **ISSUES FACED/CORRECTIVE MEASURES:**

In the framework of the activity 3.4 a period of internship for one junior researcher from Ardhi University to be hosted in Sapienza University was foreseen. The planned internship did not take place because the Italian Embassy in Dar es Salaam denied issuing visa to the designated researcher. The collaboration took place in a distance



modality and did not cause any relevant change in the project results.

The involvement of the LGAs' officers from several departments represented the main challenge of this phase of the project. As already mentioned above their participation during the international workshop was active and successful.

**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.*

<b>Result Description</b>	<b>Result Indicator (OVI)</b>	<b>Target</b>	<b>Performance Rating (Red, Yellow, Green)</b>	<b>Progress/Arising Issues</b>	<b>Action Required by the which implementing partner/s</b>
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		





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	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	5 images acquired		6 images acquired	
	N. LANDSAT classifications	5 classifications	Traffic Light	6 classifications	
	N. LANDSAT images processed	5 images processed (period 2002-2010)		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	The short course has been held on “Seawater intrusion monitoring”	
	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	1 methodology	Traffic Light		
	N. georeferenced boreholes	133 georeferenced boreholes			



	N. boreholes selected for the monitoring network	90 boreholes selected for the monitoring network			
	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	1 methodology			
	N. maps produced	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 CC vulnerability scenarios	1 methodology	Traffic Light		
	Number of scenarios explored	3 scenarios explored			
	N. methodologies for investigating Land Cover Change correlation with CC	1	Traffic Light		
2.3 Methodology for designing community based adaptation initiatives developed	N. of methodologies for designing community based adaptation initiatives	1 methodology	Traffic Light	The methodology is defined, guidelines are developed. A working paper describing the methodology was elaborated and it will be available on the project web site	SAPIENZA & ARU
2.4 2nd International Workshop organized	N. Background papers	2	Traffic Light	Background papers were 3	



	N. papers presented	4	Traffic Light	Papers presented were 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 20 <sup>th</sup> April 2013  Almost 100 persons in the opendoor session on 22 <sup>nd</sup> 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	Questionnaires administered	
	N. Training toolkit	1	Traffic Light	A training toolkit is under elaboration	SAPIENZA & ARU
	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	
3.3 Mid term Conference organized	N. submitted papers	12	Traffic Light	5 adaptation proposals have been submitted by the LGAs	
	N. People attending the Conference	100	Traffic Light	60	

3.4 Dar's municipalities supported in designing adaptation initiatives	N. Adaptation initiatives designed	At least 4	Traffic Light	4 local plans has been selected and assessed. A working paper that describes the analysis and summarizes the recommendations was elaborated and it will be available on the project web site	SAPIENZA & ARU
3.5 3rd International Workshop organized	N. Background papers	2	Traffic Light	Background papers were 4	
	N. papers presented	4	Traffic Light		
	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	17 persons in the indoor session on 9 <sup>th</sup> June 2014; Almost 40 persons in the opendoor session on 10 <sup>th</sup> June 2014	
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	2 published  1 published  2 published and 1 in press  2 published and 2 in press	SAPIENZA & ARU
	N. evaluation reports	6 (2 evaluation reports for each international workshop)	Traffic Light	4 evaluation reports already produced for the 1 <sup>st</sup> and the 2nd international workshops; 2 evaluation reports are under	SAPIENZA & ARU



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				elaboration and will be available on the project web site	
	N. Proceedings (international workshop and conference)	4 proceedings	Traffic Light	Proceedings of the second international workshop are under preparation.	SAPIENZA & ARU
	N. Booklets reporting on designed adaptation initiatives	500 copies	Traffic Light	1 Booklet reporting main project results is under elaboration	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	
	N. Promotional material kit	1 brochure + 1 bag + 1 CD Rom	Traffic Light	Pen-drive has been produced instead of CD Rom for all the international workshops. Brochure have been distributed in several events. Also t-shirt and posters have been produced for dissemination and visibility during participatory cycles	