

General Description of MYWAS Project Activities 2011-2013

The Creation of a National Water Management System for Palestinian Use: The MYWAS Project 2011-2013

(under the Memorandum of Understanding on the Utilization of a Financial Donation for Implementation of the Project "National Water Management System" between the Ministry of Foreign Affairs of the Czech Republic and the Palestinian Water Authority signed on 7th of March 2011)

2008 MYWAS Activities

The Palestinian Water Authority (PWA) appreciates the Czech Development Agency's support in 2008 for the first phase of this truly important project for Palestine – the adoption and development of the "WAS" (Water Allocation System) and "MYWAS" (Multi-Year Water Allocation System) models. Czech support allowed PWA to make an initial effort to explore and begin the use of these models. This included the following activities:

- One-day conference introducing the WAS tools and concepts for PWA staff
- Multi-day training session in the use of WAS for PWA staff
- District level data collection essential for input into WAS model

The Palestinian Water Authority had proposed during the 2008 activities to build and adapt a WAS/MYWAS model for Palestinian use – through an internal institutional Memorandum dated November 10, 2008. The WAS license was then purchased for use by the PWA with the Czech Development Agency funds. Later on in 2010 the PWA expanded on this premise by adopting the development of the "MYWAS" (Multi-Year Water Allocation System) model in Palestine - interfacing with WEAP (Water Evaluation and Planning) model of the Stockholm Environment Institute. The PWA has formally agreed to explore and eventually adopt these models, setting up a group within the Authority to deal with this process. For the PWA to fully use the improved WAS Model (MYWAS), they will require a substantial effort to update data, consider possible scenarios and projections related to population growth, infrastructure projects, climatic changes, and variations in agricultural techniques and prices, among other things. Such information will have to be at the district level within Palestine, and not simply nationwide. It should be stressed that based on all of these needed tasks, this project will require a thoroughly trained long-term 'team' within PWA to both build the interfaced model in order that it can be utilized for strategic planning – and to keep the data input up-to-date on an annual basis.

The project – "The Creation of a National Water Management System for Palestinian Use: The MYWAS Project 2011-2013" – builds on the work accomplished from 2008-2010 to set up the foundation for a Palestinian national water management strategy along with the technical work needed for building the interface between MYWAS and WEAP.



The ADDED VALUES to PWA of the MYWAS Interface Model:

MYWAS is a powerful, innovative tool that enables the cost-benefit analysis of water infrastructure projects, taking into account forecasts of such things as climate change, rainfall, and population growth. Significantly, MYWAS also takes into account the user's own values and policies concerning water. When finally utilizing multi-year Palestinian data, MYWAS will be a powerful tool for the analysis of current, future and proposed water management issues, water infrastructure planning, and alternative water policies. Palestine faces severe water scarcity, and requires new water infrastructure. MYWAS will be of major assistance in planning and analyses of the results of computer software using this program, and will allow the PWA to make informed technical and strategic planning decisions.

The acquisition of the WAS Licence in 2008 and thus the willingness to adopt the WAS/MYWAS tool within the PWA constitutes the first stage of this long-term project. The next steps will be the training and building of a Palestinian team of dedicated experts concurrently with developing the model for analysis and practical applications for long-term, sustainable implementation. *A significant parallel benefit is the water sector data collected will not only be used in the model but will be entered in the PWA data base for future reference by all.* The general goals, as outlined in the MOU, for the 2011-2013 activities are as follows:

- Development and utilization of the models within the PWA.
- Use of the models to enhance the water sector management within the West Bank.
- Ensure that the Palestinian Water Authority has the ability to evaluate and prioritize investments and policies in the water sector, looking at impacts system-wide, including different options.
- Create the expertise needed within the PWA to use the MYWAS models beyond the 2013 completion date of the project through capacity building workshops and technical training.

The overriding goals set above are entirely consistent with the national strategy for poverty reduction and the inter-ministerial national development strategy for Palestine.

These models (WAS/MYWAS) are based on a new concept. Efficient and sustainable water management requires a system-wide approach that takes into account the special characteristics and values associated with water. WAS/MYWAS provides the tool for that approach, maximizing the net benefits to be obtained from the available water while taking into account water's special social values as specified by the user. WAS/MYWAS considers water values (both private and social) and allows a systematic analysis of water issues. In particular, it permits the examination of the system-wide benefits and costs of proposed infrastructure projects and assists in the choice of which ones to build, when to build them, and to what capacity.

It is proposed that MYWAS methods be applied to real project planning, leading to informed decision-making at all levels of water management. Interface work for further software development will be done both by PWA and by the WAS 'experts'. This interface will then be used by PWA in conjunction with hydrological modeling.

Multiyear data (varying forecasts, possible infrastructure projects, etc.) will have to be prepared by the PWA for use in the MYWAS model. The PWA needs to identify a set of water projects for development in line with a master-plan for the Palestinian Territories in coordination with the Ministry of Planning. The PWA is in great need of infrastructure development, policy analysis, and institutional capacity building. In the future, MYWAS can also be used to guide regional water



management and regional cooperation in water for the benefit of all parties.¹ Guided cooperation between Palestine and Jordan appears to be a good place to begin since Jordan has also agreed to a similar program.

MYWAS is a tool that can be used – with proper training – in all of these aspects. The vision for this intervention is to improve the livelihoods of Palestinians through improved access to water for domestic, industrial, agricultural, and the touristic sector through better water resources management and service delivery. The specific objectives within the three-year phase is to ensure that the Palestinian Water Authority has the ability to evaluate and prioritize investments and policies in the water sector, looking at impacts system wide, including different options. These objectives are entirely consistent with the national strategy for poverty reduction and the inter-ministerial national development strategy for Palestine.

The Creation of a National Water Management System for Palestinian Use: The MYWAS Project 2011-2013 Activities Timeline

Below is a description of what is to be accomplished by the PWA during the first year with the adoption and development of the “MYWAS” (Multi-Year Water Allocation System) model in Palestine, interfacing with WEAP (Water Evaluation and Planning) model of the Stockholm Environment Institute. Activities are specified for each year. The work plan will be carried out in three-month intervals (quarters), followed by a submission of all invoices and the submission of a progress report.

The MYWAS program must be adapted to Palestinian needs. This requires the input of Palestinian data, but it also requires practice and experience in using the program. This will be a cooperative venture between the central MYWAS team and the PWA. As PWA expertise grows and proceeds, the Central team will gradually ‘withdraw’ so that the Palestinian model truly becomes Palestinian/PWA owned and operated.

Activities for 2011:

- a. **Data Collection: Demand, supply, economic, and financial data** to be collected in coordination with the PWA’s IT department. This funding will allow for data collection for all remaining West Bank governorates (Ramallah, Jericho/Jordan Valley, Jerusalem, Jenin, Tubas, Tulkarem, Qalqilia, Nablus and Salfit), in addition to updating and expanding upon the data collected previously for Bethlehem and Hebron governorates in the 2008-2010 periods. A reliable MYWAS database will be developed for the specific purpose of studying and analyzing the various outcomes under different scenarios. This will require fieldwork and time to enter the data and evaluate it for accuracy. Data on pricing will be collected within the PWA, and approaches for alternative pricing policies identified. These data and pricing policies will then be entered into MYWAS.

1st Quarter: Finalization of Data Needs for MYWAS and Data Collection Format

2nd Quarter: Data collected for Qalqilia, Tulkarem, Jenin, Tubas

3rd Quarter: Data collected for Nablus, Salfit, Jericho/Jordan Valley

4th Quarter: Data collected for Ramallah, Jerusalem, Bethlehem, Hebron

¹ As political conditions improve in the region, outreach of the benefits of valuing water as a social and economic good must also include Jordan, Lebanon, Syria, Israel, Egypt and Turkey.



- b. **Model development:** MYWAS will be further developed to do exploration of pricing policies, tariffs, and other social values. Training materials will be prepared to support this new development.

1st Quarter: Documentation of Data Needs for MYWAS Program Planning
2nd Quarter: Model Calibration and analysis, GAMS outputs with graphical capabilities in WEAP
3rd Quarter: Extending ability of MYWAS to do social indicators, social values and tariff policies
4th Quarter: Linking MYWAS to PWA databases

- c. **Scenario development:** Future population growth rates will need to be specified, along with possible changes in other demands. In addition, potential infrastructure for the entire West Bank will need to be identified, including costs, both capital and operational, and constraints on location and size. These will be used to develop alternative scenarios of access to water to test the robustness of new potential infrastructure and pricing policies.

1st Quarter: Data Collection for scenario development and Entry by District
2nd Quarter: Data Collection for scenario development and Entry by District
3rd Quarter: Infrastructure project selection and prioritization
4th Quarter: Infrastructure project selection and prioritization

- d. **Capacity building:** A continuing and extensive program of training will include PWA and Ministry of Agriculture staff and academic researchers with a goal to build broader capacity in Palestine to do economic analyses around water planning and management.

1st Quarter: Project Mobilization, International experts training visit
2nd Quarter: Data Summaries by District
3rd Quarter: Capacity building and model development workshop
4th Quarter: Building a working model expertise

- e. **Outreach:** Successful implementation of this project will include an understanding of the basic concepts that go beyond PWA staff. A national or regional workshop will be held to highlight the work done by the PWA. If the political situation allows, it will be open to water and economic work that is done elsewhere in the region and will encourage participation particularly by Jordan, Lebanon, Syria, Israel, Egypt and Turkey. The workshop would be open to both practitioners and academics. Outreach materials will also be prepared for the general public.

1st Quarter: Project Mobilization
2nd Quarter: Data Review
3rd Quarter: Scenario Development
4th Quarter: National or Regional Workshop

Project Outputs for 2011:

The project outputs in terms of measurable indicators for the year 2011 are specified as follows.

- The number of PWA core staff (at least 6) and academic researchers (2) trained in evaluating investments and policies in the West Bank.
- Data collection from West Bank governorates of Ramallah, Jericho/Jordan Valley, Jerusalem, Jenin, Tubas, Tulkarem, Qalqilia, Nablus and Salfit by 4th quarter 2011.



- Data from Bethlehem and Hebron updated and expanded upon by 4th quarter 2011.
- MYWAS database development for the specific purpose of studying and analyzing the various outcomes under different scenarios.
- New ability in MYWAS to evaluate alternative pricing and other social policies.
- Applied scenarios of the MYWAS model in the West Bank to evaluate new infrastructure and/or alternatives (10 scenarios).
- National or regional workshop on water and economics, including researchers and practitioners from the region held in the 4th quarter. Outreach materials (pamphlets, factsheets) for required number of people prepared in advance of the workshop,

Project Indicators for 2011:

The project indicators for 2011 will measure the progress, whether the project outputs, and if the purpose and goal have been achieved (measure of whether outputs were achieved).

- PWA staff collected data from eleven (11) West Bank governorates.
- Six (6) core PWA staff and two (2) academic researchers trained on investment and policies in the West Bank.
- MYWAS database developed and PWA staff trained on use of database.
- Ten (10) scenarios evaluated for the MYWAS model in the West Bank.
- National workshop participants trained in water management practices for the region, and on MYWAS activities.

Means of Verification for 2011 Indicators:

The information or data required assessing progress on the MYWAS project against indicators and their sources.

- Collection of data from eleven (11) West bank governorates compiled into summary report.
- Existence of core PWA staff functioning in a coordinated MYWAS team in Ramallah with links to academic researchers in the West Bank.
- Outcomes of national workshop on water management practices and MYWAS activities incorporated into annual final progress report.
- Progress reports every quarter (3 months) finalized and submitted to Czech Development Agency.

Activities for 2012:

Specific indicators and verification means will be developed as the project unfolds.

- Model development:* MYWAS will be improved in its ability to represent agricultural, industrial and tourism water demands through a process of calibration and validation of data. The Agricultural Sub-Model (AGSM) will be developed so that it can link with MYWAS, but also be used as a stand-alone platform for analyzing the impacts of water availability and pricing.



- b. *Data collection:* Data for detailed agricultural, industrial and tourism water demands will be collected by staff of the Project Management Unit (PMU) of the PWA through consultation with municipal level water management practitioners. Emphasis will be placed on potential future development of these sectors that would increase the overall welfare of Palestinians through improved economic conditions. The data would be entered into MYWAS and AGSM.
- c. *Scenarios to evaluate infrastructure and policies:* Building on the work done in 2011, the new scenarios will be more detailed in how the Palestinian economy could grow with sectoral expansion in agriculture, industry and tourism. The robustness of potential infrastructure and pricing policies can be evaluated with more rigor and with a deeper knowledge of these key sectors.
- d. *Capacity building:* One national workshop on capacity building and model development will be held in Ramallah. A continuing and extensive program of training will include PWA, the Ministry of Agriculture and Ministry of Planning staff and academic researchers with a goal to build broader capacity in Palestine to do economic analyses around water planning and management.
- e. *Outreach:* A national / regional workshop will be held to highlight the work done by the PWA and associated Ministries. It will be open to both practitioners and academics and will encourage participation particularly by Jordan, Lebanon, Syria, Israel, Egypt and Turkey. Outreach materials will also be prepared for the Palestinian general public.

Project Outputs for 2012:

The project outputs in terms of measurable indicators for the year 2012 are specified as follows.

1. MYWAS calibrated and verified with inputs of agricultural, tourism and industrial sector data.
2. Development and testing of Agricultural Sub-Model with data from agricultural, industrial and tourism water demands
3. Data collected and input into MYWAS to establish new and different scenarios from 2011.
4. National/regional workshop in Ramallah held, with participants trained on MYWAS model use and development

Project Indicators for 2012:

The project indicators for 2012 will measure the progress, whether the project outputs, and if the purpose and goal have been achieved (measure of whether outputs were achieved).

- A number of scenarios run on calibrated and verified MYWAS model
- Continued training for the PWA core staff on MYWAS model
- National/regional workshop participants presented with results regarding water management practices for the region, and on MYWAS activities.
- Potential infrastructure and pricing policies developed for a number of governorates in the West Bank.

Means of Verification of 2012 Indicators:

The information or data required assessing progress on the MYWAS project against indicators and their sources.



- Outcomes of national workshop on water management practices and MYWAS activities summarized into report.
- Progress reports every quarter (3 months) finalized and submitted to Czech Development Agency.
- Reports on potential infrastructure and pricing policies for West Bank governorates developed and incorporated into overall water strategy and national water plan for the West Bank.

Activities for 2013:

Specific indicators and verification means are still to be developed as the project unfolds. Below is a general summary of activities for year 2013.

- Model development:* MYWAS will be improved in its ability to consider more detailed surface and groundwater hydrology in the context of climate change, including the PWA's MODFLOW modeling efforts for the Western Aquifer.
- Data collection:* Collection of data and more detailed hydrological models for ground and surface water resources will be linked with MYWAS. This will require significant work on calibration and validation.
- Scenarios to evaluate infrastructure and policies:* Building on the work done in 2011 and 2012, the new scenarios will be more detailed in the evaluation of effects of climate change and identifying priority infrastructure and policies to make Palestinians more resilient in the context of climatic uncertainty, population growth and increased utilization of limited water resources in expanding economic sectors.
- Capacity building:* One national workshop on capacity building and model development will be held in Ramallah. A continuing and extensive program of training will include PWA and relevant government and non-government stakeholders for using and analyzing results from MYWAS to prioritize investments and establish a national water plan based on input from MYWAS analyses.
- Outreach:* A regional conference will be held to highlight the work done by the PWA and associated Ministries, to build public and political support for the on-going activities of the PWA as related to the MYWAS project. It will be open to both practitioners and academics and will encourage participation particularly by Jordan, Lebanon, Syria, Israel, Egypt and Turkey. Outreach materials will also be prepared for the Palestinian general public.
- National Water Plan:* Building on work completed in the 2008-2010 period, a National Water Plan will be prepared based on the applied scenarios generated by MYWAS, consultation with the National Water Council and input from a broad set of stakeholders.
- Feasibility studies:* Feasibility studies will be carried out for infrastructure projects identified by MYWAS as having the highest priority and impact on improving access to water for Palestinians.

Project Outputs for 2013:

1. Development of a number of new and different scenarios to evaluate infrastructure and policies as envisioned within the national water plan or strategy for the West Bank.
2. National/regional workshop participants presented with results regarding water management practices for the region, and on MYWAS activities.



3. MYWAS input provided for policy advice in the drafting of PWA's contribution to the National Water Plan or Strategy.

'The Creation of a National Water Management System for Palestinian Use: The MYWAS Project 2011-2013' Indicators of Achievement, Results, Impacts, Assumptions and Risks, and Inputs

At the end of the project time scale, it must be assessed if the overall objectives were achieved, and what the results are.

Indicators of Achievements for overall objectives:

- Development and utilization of the MYWAS WEAP AND AGSUM model within the PWA.
- Development of Water Master Plan for PWA investment purposes.
- Use of the models to enhance the water sector management within the West Bank.
- Infrastructure and pricing policies for eleven (11) West Bank governorates developed and implemented.
- Sustainability of MYWAS ensured, through core team of PWA staff trained in MYWAS model software, scenario development and data collection methodology.
- Ensure that the Palestinian Water Authority has the ability to evaluate and prioritize investments and policies in the water sector, looking at impacts systemwide, including different options.
- Create the expertise needed within the PWA to use the MYWAS models beyond the 2013 completion date of the project through capacity building workshops and technical trainings.

Expected Results:

- The continued functioning and development of the core PWA MYWAS/WEAP team to ensure the long-term use of the MYWAS/WEAP model and all its corresponding sub-programs.
- The development of an extensive and intensive monitoring program for data collection and entry within the PWA, to be utilized in the continuing updating of the MYWAS/WEAP model that will be used for project planning and investment decisions.
- The development of the skills needed on the MYWAS/WEAP model by the core PWA team in order to plan, strategize and prioritize projects based on real data from the field and real data of the needs of the Palestinian population in the West Bank.
- Development of a reliable and accessible technical water-related data base of the West Bank for the PWA, for the PA, and for academia – in addition to its use within the MYWAS/WEAP model.

Impacts:

- Better water management practices within the 11 governorates of the West Bank, and an overall optimization of water quantities for the beneficial socio-economic development of the West Bank.
- Relevant policies of the PWA and PA are formed based on the outcomes of the 2011-2013 MYWAS/WEAP project.
- Potential for use in final status negotiations over water resources for the Palestinian Territory.



Assumptions and Risks:

Factors external to the project that are likely to influence the work of the project, management has little control over, and which need to exist to permit progress to the next year of activity.

- Palestinian Authority dissolves due to political circumstances, and the PWA disbands.
- Israel government does not allow water infrastructure development or data collection and monitoring in the West Bank.

Inputs for Project:

It is essential to procure materials, equipment, and software and provide funds for international, national and local experts to undertake a variety of activities. Below is a list of the most pressing purchases needed to being the project. For more budgetary details, refer to Appendix I.

Large Scale Procurement at preliminary stage to begin project:

- Two (2) vehicles for field work, including insurance
- Four (4) laptops
- Multiple User Site License for GAMS Mathematical Optimization
- Update of ArcGIS License to Version 10.0, with training component
- Dedicated Blade Server for MYWAS to be accessed through PWA network
- Aerial Photo Images, resolution 0.5 meters, 15 layers, mosaic of the entire West Bank as of June 2010
- New Version of GMS MODFLOW 7.0 or above
- A3 Color lazer printer
- A1 (A2, 3, 4) inkjet printer

NOTE: The budget line items are estimated and put as a guideline. All payments will be made according to submitted invoices according to the procedures of the Memorandum of Understanding.



Appendix Number 1: Budget Time Line for the First Year 2011- by quarter for the MYWAS WEAP Project - Creation of a National Water Management System							
ACTIVITY	CATEGORY	SPECIFICATION	PRELIMINARY STAGE (1st payment)			REASONING	
			AMOUNT	PRICE/UNIT (CZ\$)	PRICE/TOTAL (CZ\$)		
Project Mobilization	Procurement	Vehicles for field work (preferably Skoda) - incl. Insurance	2	500,000	1,000,000	Needed for site visits, field work and data collection.	
Providing Hardware	Procurement	Regular laptops	4	30,000	120,000	Needed for data entry and storage and calibration.	
Providing Software	Procurement	Multiple User Site License for GAMS Mathematical Optimization	1	155,000	155,000	Needed in order to connect MYWAS model to WEAP. It is the programming language.	
Providing software	Procurement	Update of ArcGIS License to Version 10.0, with training component. Package includes: ArcMap, ArcInfo, ArcCatalog, ArcTools, ArcEditing, ArcNetwork	1	200,000	200,000	Needed for data presentation and scenario development on layered map formats (shape files).	
Providing secure hardware storage for model and data	Procurement	Dedicated Blade Server for MYWAS WEAP for the specific use of relevant models and programs (and data storage) to be accessed through PWA network	1	100,000	100,000	Needed for MYWAS model and data security.	
Providing needed input for reliable mapping as supporting tools for modeling activity and data collection activity	Procurement	Aerial Photo Images - resolution 0.5 meters; 15 layers, mosaic of the entire West Bank as of June 2010	full set	290,000	Needed for model development, scenario analysis, and verification of current status of infrastructure on-the-ground.	
Providing needed software.	Procurement	New version of GMS MODFLOW 7.0 or above	1	366,000	366,000	Needed for model development and the integration of MYWAS and groundwater models.	
Providing needed hardware.	Procurement	A3 color laser printer	1	30,000	30,000	Needed for data and scenario presentations and publications.	
Providing needed hardware for printing maps and graphics.	Procurement	A1 (A2, 3, 4) inkjet printer	1	30,000	30,000	Needed for data and scenario presentations and publications.	
		Sub-total 1			2,291,000		
1st Quarter (2nd payment)							
a	Data Collection: Data Needs Assessment	International Travel	Round-trip ticket from Boston, Massachusetts, USA to Tel Aviv, Israel	one person	44,000	44,000	Technical Support from MYWAS expert
a	Data Collection: Data Needs Assessment	Accommodation	Hotel in Ramallah (6-7 days) + local transportation	one person per night	2,200 per night	16,000	Technical Support from MYWAS expert
b, d	Model Development; Capacity Building	Remuneration	International MYWAS and WEAP experts for model development and interfacing, capacity building, preparation of training materials	5 senior staff, 2 junior staff of the Stockholm Environment Institute (Water Economics Project)	As per invoices.	380,000	Inventors of WAS - and the interfacing with WEAP.
c,e	Scenario Development; Outreach	Remuneration	Local MYWAS expert for capacity building, outreach materials	one person, 24 days minimum	2,500	60,000	Was one of the developers of the Palestinian part of WAS
a	Data Collection and Entry	Remuneration	Local experts and temporary field data collectors for data entry	Data collector 600 per day; Local expert 2000 per day	As per invoices.	123,250	Needed work force.
d,e	Capacity Building; Outreach	International Travel	Travel Allowance to Jordan or Lebanon for regional cooperation on MYWAS WEAP, or to relevant workshops or symposiums (to include air and land travel, accommodations, and per diems).	Persons and places to be determined by PWA.	As per receipts.	71,250	Exchange of experience and data with riparians of the Jordan River Basin.
	PWA Administrative Costs	PWA Administrative Costs	Administrative costs, incl. fuel, car maintenance, food for field workers and trainees - 1/4th of 5% of annual total	N/A	N/A	68,750	
			Sub-total 2			763,250	



2nd Quarter (3rd payment)						
Activities Reference						
b,d	Model and Scenario Development; Capacity Building	Remuneration	International MYWAS and WEAP experts for model development and interfacing, capacity building, preparation of training materials	5 senior staff, 2 junior staff of the Stockholm Environment Institute (Water Economics Project)	As per invoices.	380,000
c,e	Scenario Development; Outreach	Remuneration	Local MYWAS expert for capacity building, outreach materials	one person, 24 days minimum	2,500	60,000
a	Data Collection and Entry	Remuneration	Local experts and temporary field data collectors for data entry	Data collector 600 per day; Local expert 2000 per day	As per invoices.	123,250
a,c	Capacity Building; Outreach	International Travel	Travel Allowance to Jordan or Lebanon for regional cooperation on MYWAS WEAP, or to relevant workshops or symposiums (to include air and land travel, accommodations, and per diems).	Persons and places to be determined by PWA.	As per receipts.	71,250
		PWA Administrative Costs	Administrative costs, incl. fuel, car maintenance, food for field workers and trainees - 1/4th of 5% of annual total	N/A	N/A	68,750
Sub-total 3						703,250
3rd Quarter (4th payment)						
Activities Reference						
d,e	Training Workshop	Capacity Building; Outreach; Dissemination of Information	Organization of Training Workshop, Public Relations Materials for workshop, bilingual brochures - designing and printing, MYWAS/WEAP participants folders, pens, handouts, Translation allowance Arabic and English	two day workshop	As per receipts.	126,000
d,e	Training Workshop	International Travel	Round-trip ticket from Boston, Massachusetts, USA to Tel Aviv, Israel for 2 people	2	44,000	88,000
d,e	Training Workshop	Accommodation	Hotel in Ramallah 6-7 days x 2) + local transportation	2 people per night	4,400 plus taxis	32,000
b, c, d	Model and Scenario Development; Capacity Building	Remuneration	International MYWAS and WEAP experts for model development and interfacing, capacity building, preparation of training materials	5 senior staff, 2 junior staff of the Stockholm Environment Institute (Water Economics Project)	As per invoices.	380,000
c,e	Scenario Development; Outreach	Remuneration	Local MYWAS expert for capacity building, outreach materials	one person, 24 days minimum	2,500	60,000
a	Data Collection and Entry	Remuneration	Local experts and temporary field data collectors for data entry	Data collector 600 per day; Local expert 2000 per day	As per invoices.	123,250
d,e	Capacity Building; Outreach	International Travel	Travel Allowance to Jordan or Lebanon for regional cooperation on MYWAS WEAP, or to relevant workshops or symposiums (to include air and land travel, accommodations, and per diems).	Persons and places to be determined by PWA.	As per receipts.	71,250
		PWA Administrative Costs	Administrative costs, incl. fuel, car maintenance, food for field workers and trainees - 1/4th of 5% of annual total	N/A	N/A	68,750
Sub-total 4						823,250



Activities Reference		4th Quarter (5th payment)						
c,e	Scenario Development; Outreach	International Travel	Round-trip ticket from Boston, Massachusetts, USA to Tel Aviv, Israel	2 people	44,000	88,000	Technical Support from MYWAS expert	
c,e	Scenario Development; Outreach	Accommodation	Hotel in Ramallah (6-12 nights x 2) + local transportation	2 people per night	4,400 plus taxis	42,000	Technical Support from MYWAS expert	
e	Outreach; Dissemination of Information	Dissemination of Information	Public Relations Materials, such as brochures, posters, flyers, case studies, publications, maps, and/or survey or data forms.	As per order.	As per invoice.	86,000		
b,c,d	Model and Scenario Development; Capacity Building	Remuneration	International MYWAS and WEAP experts for model development and interfacing, capacity building, preparation of training materials	5 senior staff, 2 junior staff of the Stockholm Environment Institute (Water Economics Project)	As per invoices.	380,000	inventors of WAS - and the interfacing with WEAP.	
c,e	Scenario Development; Outreach	Remuneration	Local MYWAS expert for capacity building, outreach materials	one person, 24 days minimum	2,500	60,000	Was one of the developers of the Palestinian part of WAS	
a	Data Collection and Entry	Remuneration	Local experts and temporary field data collectors for data entry	Data collector 600 per day; Local expert 2000 per day	As per invoices.	123,250	Needed work force.	
d,e	Capacity Building; Outreach	International Travel	Travel Allowance to Jordan or Lebanon for regional cooperation on MYWAS WEAP, or to relevant workshops or symposiums (to include air and land travel, accommodations, and per diems).	Persons and places to be determined by PWA.	As per receipts.	71,250	Exchange of experience and data with riparians of the Jordan River Basin	
		PWA Administrative Costs	Administrative costs, incl. fuel, car maintenance, food for field workers and trainees - 1/4th of 5% of annual total	N/A	N/A	68,750		
Sub-total 5							919,250	
Total 5							5,510,000	



[Handwritten signature in blue ink]