National Stakeholder Consultations on Water: Supporting the Post-2015 Development Agenda

Guatemala

March-April 2013

THE WORLD WE WANT

Global Water Partnership Central America

The Post 2015 Water Thematic Consultation

1. Importance of Water Resources in National Development

Guatemala, the northern country of the Central American isthmus, has a gross water offer of 97,120 million cubic meters a year, equivalent to 6,900 m^3/person[1], for a relative abundance of water. However, the space and timely distribution of water reduce its availability in certain areas during each season. For example: 42% of the water offer is in Gulf of Mexico basin, the less populated and developed zone, while the Pacific Basin has a water offer of 23.7 %, but concentrate 45% of the population[1]. There is a rainy season from May to October, and in the other six months there is almost no rain, diminishing the superficial flows. On the other hand, the existing use of the water is less than 10% of the offer (9,596 million of cubic meters), 53.6% is consuming. The most important consuming use is agriculture with 77%, followed by 16% for human consumption; the remaining 7% is for the industry and other sectors. With regard to the non consumptive uses they represent 46.4% of the total use[1].

According to IARNA and BANGUAT, the data reported by the agricultural census for the year 2002-2003, the irrigated agriculture occupied 11% of the agricultural lands. In Guatemala, the agriculture generates 12% of the GDP, which is related with agro industrial crops associated to irrigated land. An example is sugar, one of the main domestic export products, with a strong component under irrigation[2]. Also the sugar and coffee mills consume water, although its quantification is not so exact. According to Castañón, from the School of Economics at USAC[3], the GDP directly related with the water it ascends to 5% and it is basically related only with the agriculture under irrigation. Other sectors like the industrial, tourist do not have enough data to determine their exact contribution, although there is an on going effort to change the way the water value is considered at the national accounts at a combined effort between IARNA and BANGUAT.

To reduce the shortage of water in urban area especially, an integral use of urban waters will help to improve the quality and continuity of services, since more than 86% of the population have services, (although in the rural area, it is only 65%), but it is unquestionable that the continuity and quality are still faulty. According to RASGUA the health system attended more than half million of children's cases with illnesses related to water in 2005 and also reported a thousand infantile deaths for the same cause.[4]

---

[1] Situación de los Recursos Hídricos en Centroamérica, hacia una Gestión Integrada, Global Water Partnership Abril 2011.

[2] Cuenta Integrada de Recursos Hídricos, Resultados y Análisis, IARNA-Banco de Guatemala, Coediciones 32, diciembre 2009, Guatemala.

[3] http://www.infoiarna.org.gt/media/file/areas/agua/documentos/pres/%282%29%20El%20agua%20en%20la%20econom%C3%ADa%20de%20Guatemala.pdf

[4] Valoración estratégica sobre la importancia del agua potable y el saneamiento básico en el desarrollo, la salud y la educación en Guatemala, RASGUA Guatemala 2007

The economic effects due to bad quality of water and sanitation services are underestimated, since usually other economic benefits are not taken in account: i) more tourism due to a clean environment and less risks to the health; ii) improving fishing potential of continental and marine waters as pollution is reduced, iii) land property value increase for improvement of the aesthetic and reduction of bad scents and iv) the use of the by-products of the treatment plants for fertilizers and generation of biogas[5].

The potential of good integrated water management, it is not only important in the economic aspect, it is also important as national security and sovereignty. According to CNEE, presently 50% of the energy production is hydropower, but only 17% of the hydroelectric potential of 5,000 MW[6] has been developed. If all the hydroelectric potential will be used, the country not only will be energy independent, but also the country will be electric energy exporter. An efficient irrigation management will allow watering all the land subjected to irrigation, and not only improve food security, but also to adapt to the climate change effects. It is important to mention than 65% of the territorial waters are drained to other countries, so it is a high potential to generate environmental services payments, if the water quality is under adequate parameters.

2. Key National priorities for the sustainable development of Water

To define the national priorities for IWRM, a workshop was carried out in the city of Antigua Guatemala on March 5 the 2013. Seventeen representatives, of local governments and institutions from the central government, attended the workshop, also 27 representatives from the civil society and 11 representatives from the academic sector. Four of them had participated in previously realized interview, for the level 2 survey of United Nations-Water.

The workshop was opened by Estuardo Velásquez as representative of the Technical Secretariat of the Water Cabinet and representatives of GWP. Then some presentations were introduced about the water situation at world level, at Central American level, and at Guatemalan level; as well as the objectives of the shop and the expected results. Finally four groups were conformed in three general topics, each one with their discussion guided i) Water Supply, sanitation and hygiene; ii) Waste water and water quality and iii) Integrated water management (two groups). The detailed list of participants, the workshop program, as well as the groups´ conclusions are shown in the annex.

With the workshop results were integrated and the proposals carried out by the working groups are described as follows.

[5] The economic case for increasing access to improved sanitation and water supply: Quantifying the Costs and Benefits of Water Supply and Sanitation, Framing Paper, The Post 2015 Water Thematic Consultation - Water, Sanitation and Hygiene

[6] http://www.cnee.gob.gt/xhtml/prensa/Presentaciones/Contexto%20de%20Energ%C3%ADa%20Renovable%20en%20Guatemala%20y%20Matriz%20Energ%C3%A9tica%20del%20Pa%C3%ADs.pdf

2.1. Key Water Resources Management Priorities

The problems, detected to achieve an integrated management of water resources, start with the unsatisfied demand that continues growing as the population's growth, the sectoral vision of the institutions, the non sustainable extraction levels, especially in the dry season, as well as the inadequate quality and quantity of available water for human consumption and irrigation, affecting the health and the food security. These are followed by a lack of integral planning at basin level, concept that continues without being understood by the political sector and the decision makers, that implies deforestation and forest degradation influencing the quantities of runoff and infiltration. At local level, there are barriers from the communities as well as the private sector for an integral water resources management. These barriers are reflected by the systematic and widespread opposition, rather dogmatic, against the hydroelectric projects on part of the communities and on the other hand the little or lack of action to resolve the water pollution problems on the part of the private sector.

In the legal and institutional topic, it is evident the lack of a General Water Bill that will establish a RECTOR institution that coordinates the existent sectoral processes, but it is also evident the lack of effective application of the existent laws. Although it is certain that it is necessary a framework law, the effective application of it could be seen reflected in the application of current laws. Although the Combined Program of the Water explains the sectoral coordination and he/she also does interinstitutional coordination, the public perception is that the projects continue being sectoral projects and that the coordination is not distinguished. Another important weakness is the lack of regulations to existent laws, as well as the lack of policies and normative at municipal level, except for some rare exceptions in some mancomunities. As a short term solution, it is necessary to identify the complementarities, the contradictions and the legal voids, as well as to work in the corrections of existent laws and sectoral policies, introducing the IWRM and coordination mechanisms, while the longer process of General Water Bill is achieved.

The high-priority actions for the Integrated Water Resources Management are:

- **National Water Pact.** To make a national water pact that will define the prospective development for next years and generates an institutional reorganization identifying the governing agency for water planning.
- **Water Management Information System.** With indicators at local and basin level, water offer and demand, including infrastructure, storage volumes, IWRM plans.
- **Intersectoral and regional communication and coordination.** To improve the communication among institutions, sectors and regions, the system of information can be an instrument it bases for this communication. The process should include information, education and training at all level.
- **Awareness about the importance of IWRM at political and decision makers levels.** It is necessary to prioritize the implementation of the integrated water resources management concept, focusing around an institutional integrated intervention, linked to local

governments, in territories selected by the poverty indicators, water availability, food security, sustainable environment, energy security, and others.

- **To develop and to execute plans of IWRM.** To make real plans and to begin to execute them in some prioritized basins, to achieve advances at least in some local basins. Some cases as MANCUERNA and other Mancomunities can be used as reference. To include multiple purposes projects to eliminate the sectoral planning. The plans should go from the local areas to the regional areas (basin), with solutions and intervention proposals with an integration of the different sectors point of view.
- **Water Bill.** To continue the process to create and approve the Water Law. It will define rights and obligations, as well as a governing entity and coordinator, although this result will be accomplished at a medium or long term.

2.2. Key Water, Sanitation and Health priorities

The problems of drinking water, sanitation and hygiene can be summarized in four technical areas: i) insufficient fare collected from the services, ii) inequality of tariff distribution (rural area pays more and the urban areas are subsidized), iii) the lack of payment for the treatment of waste waters and iv) the absence of waste water treatment in 85% of the systems.

The lack of the application of the existent laws and normative, as well as the nonexistence for a specific Law for the Water and Sanitation, hinder the development in this sector. The sector should be regulated in the short term, so much in a specific law, like in the General Law of Water, but above all, the application of the existent regulations should be reinforced.

The high-priority actions in the topic of water, sanitation and hygiene are:

- **Education.** To strengthen the formal educational (including the topic of water resources/drinking water and sanitation in the curricular plans) and not formal, to make more effective the results of the infrastructure works, to create conscience in the advantages of drinking water and sanitation, the need of paying for these services to recover operating and maintenance costs, as well as of a more effective social control for the construction of new projects, rehabilitation, maintenance and operation of water projects. This should be at all levels and it should be promoted the formal training and technical support in all water and sanitation projects.
- **Institutional Strengthening.** To start with the elaboration and application of water and sanitation policies that consider the cultural aspects of each region in the environmental conservation, as well as the rights of the indigenous towns and the common law. Make a plan for the institutional and the community level water committee strengthening that includes an appropriate budget to fulfill the goals and the application of the regulatory scheme (see the following action). Additionally upgrade the municipal plans of water and sanitation, with a format that allows building information and monitoring system at local and national level.

- **Application of the regulatory scheme.** A route map and a properly budgeted/financed action plan, to apply the existent regulatory scheme. Taking advantage of the infrastructure and improving the coordination and strengthening the institutions like INFOM, MARN and MSPAS. For the existent legal structure the coordinating entity should be the MSPAS.
- **Conservation of water recharges areas.** To incorporate in each one of the water and sanitation municipal plans, the conservation of the water recharge areas, and to establish incentives with INAB and MARN, for the protection of this areas.
- **Investment plans for water and sanitation projects.** Based on the water and sanitation municipal plans, integrate an investment national plan that includes appropriate fares with funds of the national development councils system[7], municipal funds, cooperation external funds or bilateral and multilateral sources, to be executed and to complete the covering, continuity and quality goals.
- **Investment Plans for Solid Waste Management Infrastructure.** To make regional plans for mancommunities, developing a file of solid waste projects at regional level, taking in account the protection of water recharge areas and the aquifers, integrate an investment national plan on solid waste projects, using the funds of the national development councils system, municipal funds, cooperation external funds or bilateral and multilateral sources, to be executed and to complete the covering goals.

2.3. Key waste water and water quality priorities

The main problems are on one hand that the existent treatment plants have a faulty operation and maintenance, or even have stopped to operate, on the other hand, a deficit exists, since 85% of discharges are without any treatment. Also, for the widespread problems on superficial waters and some aquifers, the quality of water is affecting the population's health.

In the legal part there are legislation and effective norms, but their application is very weak and the sanctions are not sufficiently strict to force actions for compliment of the norm. Institutionally the entity in charge is MARN, but it has insufficient technical and human resources.

The high-priority actions in waste waters and quality of water are:

- **MARN Strengthening.** Strengthen the unit in charge of the discharges regulation so that it can apply it, including equipment and human resources.
- **Sanctions strengthen.** So that the sanctions are a deterrent to make discharges that don't fulfill the established parameters.

[7] The national council system law allow participation of communities, municipal governments and central government to plan projects from the base trough Community development councils (COCODES), then the projects go to the municipal development councils (COMUDES) and then to the department councils (CODEDES). Through the system, some projects are financed.

2.4. Suggested areas for future sustainable development targets for water

- **Better access for drinking water**
  - Proposed indicators
    - **Covering in %** an increase of 12% for year 2030
    - **Infant morbidity y mortality** related to water-borne diseases by basin
    - **School desertion in %** since many times is related to illnesses.
- **Batter access to sanitation**
  - Proposed indicators
    - **Covering in %** an increase of 9% for year 2030 by basin.
    - **Treatment plants** at least 80% of the treatment plants by basin are operating appropriately by 2030
    - **Open defecation.** Total elimination that is to say 0% on 2020.
- **Waste water quality discharge improvement**
    - **Discharges without treatment by basin** NOT more than 20% of the discharges without treatment by 2030.
    - **Quality Water Index.** Every basin have their water quality index and it complies with the standard by 2030
    - **Volume of waste water reused.** Volume of water reused for catering and other uses.
- **Improve IWRM**
  - Proposed Indicators
    - **Stored Volume** to increase in 45% the water volume stored (rural and urban areas).
    - **Irrigated Hectares** to increase in 20% the irrigated area by 2030.
    - **Hydropower** to increase in 50% of the current hydroelectric production by 2030.
    - **Forest covering** Increase forest cover annually and monitoring advance and setbacks by basin.
    - **IWRM plans for basin. To have** To have IWRN plans in execution for every basin in the country by 2030. They should consider ecosystems preservation, stakeholder's participation and cultural diversity. At least three including integrated urban water management.
    - **Protection or artificial recharge projects on aquifer water recharge areas.** All water recharge areas are managed and protected by 2030.
    - **GDP water component** the value of water is reflected year by year in national accounts.
    - **Multipurpose projects** Number of multipurpose projects in operation, at least with two different uses.
    - **IWRM plans operating.** Number of plans effectively operating and their monitoring.

- **Legal and normative aspects**
    - Proposed Indicators
        - **General water Bill** includes IWRM concepts and it is approved by 2030.
        - **Water and sanitation Bill** includes IWRM concepts and it is approved by 2030.
        - **Complaints and accusation response** number of complaints and accusations received and resolved applying the existing regulatory schemes.

3. Water Resources Management Monitoring and reporting issues

In the monitoring and report theme, since there is not an existing governing entity for the water sector, a mixed system should probably be created, with diverse stakeholders and with a global coordinating entity that could be the vice-presidency or the Water Cabinet with its system (SIAGUA). An interesting proposal is the possibility that the Information System is carried out through a public-private alliance.

The Combined Program or the Water Cabinet should take the monitoring of the indicators of IWRM, leaning on the Ministries and other sectoral entities (MAGA, INE, MEM, CNEE, INDE, INGUAT, INSIVUMEH, INAB and other); academic entities as IARNA of the URL, ICC, ERIS, USAC, UMG, UVG AND other; the mancomunities, the Trifinio program and ONG´s like WWF, TNC and others.

For the topics of Water and Sanitation the units that more information has are the Ministry of Health and Social Attendance (MSPAS), Municipalities and the INFOM who should work a combined system of information on the projects of water and sanitation, mixing SAS and PROVIAGUA; supported by the surveys and censuses of INE. A budget and an appropriate number of personnel should reflect the interest in the gathering of information.

In the topic of quality and waste water the natural leader should be MARN, although it should integrate information from INSIVUMEH and the academic sector. It is of extreme importance to strengthen the sampling monitoring system and the laboratory of MARN and overall to endow it with budget and appropriate number of personnel to complete their functions.

It is considered feasible the establishment of a monitoring system at short/medium term provided the required budget is assigned to have the physical and human resources in the responsible institutions. It requires settling down effective mechanisms for coordination and information transfer. It is recommended to promote the use of virtual platforms and high technology. Another recommendation is to form alliances with the academic sector to achieve sustainability at long term for the system and even a public-private alliance is suggested for the financing and operation.

The systems should comply with at least:

1. Standardization of methods, parameters and protocols.
2. Clear and well established indicators.
3. The information should be reliable, truthful, up-to-date and opportune.
4. To have a committee for the validation of protocols, methods and quality of the information.
5. The information should be accessible and disclosed through virtual platforms.
6. The system should have enough physical, financial and human resources.

This implies commitments and obligations at all levels.

<u>For the government:</u>

- Institutional arrangements (commitments and agreements)
- A budgetary reorganization

<u>For the citizens:</u>

- Bigger opportunity of information and development
- Social audit

<u>For rural indigenous community groups:</u>

- Information access is facilitated
- Commitments to provide information

<u>For other sectors (private, NGOs, municipalities):</u>

- Commitment of providing information
- Access to the information
- Facilitate the access, the decision making process.

Glossary of Acronyms

WASH	Water, Sanitation and Hygiene
BANGUAT	Banco de Guatemala
CNEE	Comisión Nacional de Energía Eléctrica
ERIS	Escuela Regional de Ingeniería Sanitaria
GIRH	Gestión Integrada de Recursos Hídricos
GWP	Global Water Partnership (Asociación Mundial del Agua)
IARNA	Instituto de Agricultura Recursos Naturales y Ambiente, de la Universidad Rafael Landívar.
ICC	Instituto Privado de Cambio Climático
INAB	Instituto Nacional de Bosques
INDE	Instituto Nacional de Electrificación
INE	Instituto Nacional de Estadísticas
INFOM	Instituto de Fomento Municipal
INGUAT	Instituto Guatemalteco de Turismo
INSIVUMEH	Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología
MAGA	Ministerio de Agricultura Ganadería y Alimentación
MARN	Ministerio de Ambiente y Recursos Naturales
MEM	Ministerio de Energía y Minas
MSPAS	Ministerio de Salud Pública y asistencia Social
MANCUERNA	Mancomunidad de la Cuenca del Río Naranjo
GDP	Gross Domestic Product
PROVIAGUA	Programa de Vigilancia de sistemas de Agua Potable
RASGUA	Red de Agua y Saneamiento de Guatemala
SIAGUA	Sistema de Información del Agua
SAS	Sistema de Información de Agua y Saneamiento
UMG	Universidad Mariano Gálvez
USAC	Universidad de San Carlos de Guatemala
UVG	Universidad de Valle de Guatemala
WWF	World Wildlife Fund
TNC	The Nature Conservancy

ANNEX I
List of Participants

FORO "LA AGENDA DEL AGUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Alejandro Girón Braghinolli	SESAN	Alejandro.giron@sesan.gob.gt alejandrogironb@intelnett.com	52050272	G
Gladis Barrios	USAC	dirección@musacenlinea.org	22327666	U
Víctor M. Campos C.	C. Humboldt.(Mic)	subdirección@humboldt.org.ni	22487850	SC
Ema González	MUSAC	curaduria@mesacenlinea.org	22320721	U
Ever Sánchez	RASGUA	everman8@gmail.com	52071240	SC
Haroldo Galindo	Programa Conjunto	hgbuendia@gmail.com	52062861	G
Carlos José Lapola	Municipalidad de Esquipulas.		58163836	G

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Luis Pedro Xonon	Ajaw Ulew		79386001	SC
Luis Ventura García	UNAC	campesinoluis@hotmail.com	52815832	SC
Juan Noj Xoyon	Ajaw Ulew	Jnxoyon_2012@yahoo.es	56321259	SC
Sergio López Dubón	INSIVUMEH	sergioald@gmail.com	23105041	G
Daniel Juárez	CALAS	danito.jaurez75@gmail.com	49104280	SC
David González	SESAN	david.gonzalez@sesan.gob.gt	24111900	G
Abdi Vela	Cruz Roja Guatemalteca	abdifernando@hotmail.com	48544898	SC

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Mauren Ballestero		tempis@racsa.co.cr		OT
Manuel Basterrechea		asebaste@gmail.com	52038333	I
Estuardo Barreno	FANCA	renexela@yahoo.com	45853832	SC
Fabiola Tabora	GWP-Centroamérica	ftabora@gwpcentroamerica.org	(504) 22320052	O
Ana Gutiérrez	Red de Mujeres Indígenas y Biodiversidad	anagutierrezchuni@hotmail.com	53855910	SC
Roberto López Lobo	Comité los Positos		55724111	SC
Roberto Sebeyuque	Comité los Positos			SC

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Jorge Chapas	Red Rana	dirección@redrana.org		SC
Tomás Fernández	GWP-Panamá	efernandez@panama.com		O
Roberto Pérez Pérez	Comité Los Pocitos			SC
Edgar Rene Mayorga	Alcalde		55551503	G
Hugo López	Comunidad Poqoman Pajal		78388794	SC
Alfredo Cán	Ajau Ulew	alfcanc68@yahoo.com	55375327	SC
Rigoberto O. Morales G.	UMG	ottorigo@yahoo.com	31950018	U

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Claudia B. Hernández E.	UMG	brissescobar@gmail.com	55974871	U
Marco Morales	Programa Conjunto Agua	marcomorales@gmail.com	42100135	G
Esmeralda Zones de Posada	Secretaría Técnica El Salvador	eposada@presidencia.gob.sv	25115000	O
Emily Valle	Consultor Independiente	evalle.url@gmail.com	47118265	SC
Lola Cabnal	Asociación Aktenamit	mujer.maya@gmail.com	41490521	SC
Vicente Franco Leonardo	Mancomunidad Montaña El Gigante	ufranco48@hotmail.com	45427283	G
Cristóbal Pérez	Water For People	cperez@waterforpeople.org	50002376	SC

Global Water Partnership Guatemala

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Magaly Arrecis	IPN USAC	emarrecis2@gmail.com	53254702	U
Raúl López	SE-CONRED	humanittas@gmail.com	42720065	G
Alberto Herrera	SE-CONRED	a_herrerao@hotmail.com	53120104	G
José Antonio Dávila Calderon	UMG/ARQ	antonio5765davila@yahoo.com.mx	41917752	U
Leonardo Miguel Villagrán	MARN	ivillagran@marn.gob.gt	42472375	G
Guillermo Gutierrez	Facultad de Arquitecrura UMG	adearqs@hotmail.com	57086285	U
Rolando Marroquín	AMACURSA	omarro75@hotmail.com	79402744	SC

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
José Luis Galicia Guillen	ACMEFAR VII	pepegal63@hotmail.com	53071644	SC
Jorge F. Ramón R.	ABVA	agroseem@yahoo.com	77410200	SC
Olivia Orellana	MARN	oliorellana@yahoo.com	58062448	G
Ricardo López	FLACSO	rlopez@flacso.edu.gt	24147444	SC
Nabil Kawas	GWP-Honduras	nkawask@gmail.com	(504) 22353030	O
Kerstin Klein	CEMA/USAC, GWP-Guatemala	ks_kd@hotmail.com	57475516	U
José Manuel del Valle	UMG	manolodelvalle@gmail.com	52014385	U

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Blanca Aragon	MILENYA	blanca.aragon@gmail.com	52067726	SC
Mario Alberto Méndez	Facultad de Agronomía USAC	mariom@usac.edu.gt	47279912	U
Luis Javier Roche Pineda	Mancomunidad Montaña Gigante	luisjrocheto@yahoo.com	55558708	G
Abraham Moscoso Valdés	Mancomunidad Montaña Gigante		55255681	G
Joram Gil	Cátedra UNESCO del Agua/ ERIS	joramgil@gmail.com	55151697	U
Estuardo Velásquez	Secr. Esp. Vicepresidencia	estuardovv@gmail.com	52044572	G

FORO "LA AGENDA DEL GUA Y PERSPECTIVAS FUTURAS DEL DESARROLLO SOSTENIBLE POST 2015" PLACE: Hotel Soleil Antigua, 9ª. Calle Poniente Camino a Ciudad Vieja, Antigua Guatemala. DATE: Tuesday March 5, 2013, TIME: 8:30 a 16:00 hrs.				
NAME	**INSTITUTION**	**E-MAIL**	**PHONE**	**SIGNATURE**
Homero Escobar	Manclalaguna	homeroes@gmail.com	56622105	G
Enrique Merlos	GWP-El Salvador	enriquemerlos@gmail.com	(503) 22095301	O
Antonio Pivaral	RASGUA	pivaral17@gmail.com	55763057	SC
Bernall Soto	SEMA – CR	bsoto@femare.gob.gt	22226610	O
Byron Medina	Asesor	bmedina@catie.ac.cr	51617292	SC
Orden Antonio Rodas	FAO	ogden.rodas@fao.org	40772178	SC
Ana Pérez Conguache	Municipalidad Palín	noojaqabalito@yahoo.com	31292879	G