**IARD 5970 Independent Study in International Agriculture and Rural Development**

**Introducing AguaClara:**

**The Process of Establishing a Pilot Plant in the State of Chiapas**

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**Introduction: The Pilot Process**

Establishing a pilot plant in a new market is a necessary step in the dissemination and growth of the AguaClara technology. The process to do so is complex and involves a considerable number of stakeholders. We will begin this section by analyzing the process of establishing a pilot plant in a new market. Continue by conducting a stakeholder analysis. Finish by presenting the specific stakeholder analysis for the Mexican case.

New Market Identification

Community Participatory Planning

Knowledge Cluster Identification

Infrastructure Construction

Local Partner selection

Needs Assessment

Local Partner Training

Community Capacity Building

Water Treatment

Operations

Investment Procurement

Pilot Community Selection

Initial Monitoring

Fig 1. The Pilot Process

1. **New Market Identification**: In this initial step of the process, AguaClara opens the possibility of taking its technology to a new country. This may be the result of an invitation by local public or private institution, an interest by an international governmental or non-governmental organization, or the result of a strategic advancement of the AguaClara project to another country.
2. **Needs Assessment**: Once the new Market has been identified, the next step is to identify the need. Interest in the technology does not guarantee the need, or the appropriate conditions to establish an AguaClara water treatment plant (conditions can be technical, political, social, etc.).
3. **Local Partner Selection:** The local partner is the regional organization, institution or company that is in charge of disseminating and supervising the implementation of the AguaClara technology. There are different criteria that must be considered in selecting a local partner: a) Technical expertise; b) Experience both in infrastructure and community development; c) To have a team that provides a regional coverage capacity to tend to a regional knowledge cluster and d) Be apolitical.
4. **Knowledge Cluster Identification:** Acluster is a geographical space in which the AguaClara technology can spread without the need of re-investing in knowledge transfer. In other words, is the coverage area that a local partner can potentially serve (through training, supervision and evaluation). In this step of the process, a cluster is delimitated in terms of natural, political or even cultural boundaries and envisioning the capacity of the local partner.
5. **Local Partner Training**: In this step of the process the knowledge on constructing, operating and maintaining a plant is passed down from AguaClara LLC to the local partner.
6. **Pilot Community Selection**: In selecting a pilot community, the following criteria has to be considered: a) Accessibility (it will be a showcase community), b) Level of investment required (preexistent infrastructure, water distribution systems, etc.), c) Water Source d) Population, and e) Community disposition to benefit, use, operate and maintain the plant.
7. **Investment Procurement**: Here, AguaClara LLC, the local partner, the inviting institution or the beneficiary community procure the funds required to build the infrastructure through various potential sources: a) Local governments, b) International organizations, c) Foundations, d) Fundraising campaigns, etc. Important decisions have to be made in this part of the process: Who receives the funding? Who will construct the project? Who will own the infrastructure? Who will operate and maintain the infrastructure?
8. **Community Participatory Planning**: The next step in this process is to engage the community with the objective of creating local ownership of AguaClara. This step includes town hall meetings, workshops and the creation of a water management committee.
9. **Infrastructure Construction**: Having selected the community, procured the investment and assured community ownership of the project, the next step is the execution and supervision of the infrastructure. This step may include a bidding process to contract a private contractor.
10. **Community Capacity Building**: Parallel to the construction of the infrastructure, a local management capacity is generated through workshops and modules that will make the community self-reliant in the operation and maintenance of the water treatment plant.
11. **Water Treatment Operations**: Once the construction of the infrastructure has concluded and the local capacity has been developed, the next step is to do initial testing, conduct any corrective measures required and normalize operations.
12. **Initial Monitoring:** Finally, establish a monitoring system to periodically supervise the plant operations, analyze problems and success factors and integrate this information into AguaClara’s feedback loop for future projects.

The present report has the following objectives:

* Use secondary data to conduct the initial *Needs Assessment* of the state of Chiapas.
* For the *Local Partner Selection* step of the process, I will conduct a stakeholder analysis of the project, and look at the potential stakeholders.
* In terms of the *Investment Procurement*, I will analyze current international, national and local policy context to assess potential synergies and overlapping objectives with institutions working in the region, and present some potential government programs that can finance the pilot.
* Finally, I will present a proposal of the next steps to follow to achieve a pilot plant in Chiapas.

1. **Needs Assessment**
2. **Safe Drinking Water in Chiapas**

In this section we will address the question of why introduce AguaClara to Chiapas and why nowhere else in Mexico. To do so, we will look at the drinking water issues and characteristics from 3 geopolitical levels: Regional, State and Municipal.

The National Water Commission (CONAGUA) divides the country into 13 administrative regions (or Hydraulic Administrative Regions). Chiapas along with the state of Tabasco constitute the *Frontera Sur* administrative region. To analyze the impact potential of the AguaClara technology in the different regions I am going to present the natural availability of water by region and contrast it to the percentage of population who have access to drinking water by region. Key to this analysis is the comparison between natural surface water availability and lack of drinking water coverage.

The following tables provide the main indicators for this comparison:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table 1. Total Natural Water Availability, Surface Water Runoff and Replenishment of Subterranean Sources by Administrative Region for 2010** | | | | |
| **No.** | **Administrative Region** | **Total Mean Natural Surface Runoff (in annual km3)** | **Average Natural Replenishment of Aquifers (in annual km3)** | **Average Natural Water Availability (in Annual km3)** |
|
| I | Península de Baja California | 3.43 | 1.59 | 5.02 |
| II | Noroeste | 5.07 | 3.16 | 8.23 |
| III | Pacífico Norte | 22.65 | 3.27 | 25.92 |
| IV | Balsas | 17.06 | 4.94 | 21.99 |
| V | Pacífico Sur | 30.8 | 1.88 | 32.68 |
| VI | Río Bravo | 6.86 | 6.17 | 13.02 |
| VII | Cuencas Centrales del Norte | 5.75 | 2.42 | 8.16 |
| VIII | Lerma-Santiago-Pacífico | 26.01 | 8.34 | 8.16 |
| IX | Golfo Norte | 24.74 | 1,86 | 34.35 |
| X | Golfo centro | 89.83 | 4.26 | 94.09 |
| XI | Frontera Sur | 141.39 | 18.02 | 159.4 |
| XII | Península de Yucatán | 4.28 | 25.32 | 29.6 |
| XIII | Aguas del Valle de México | 1.17 | 2.34 | 3.52 |
| **National** | | **379.04** | **83.55** | **462.58** |
| Source: SEMARNAT 2013 | | | | |

By looking at the information presented in Table 1, it is clear that the *Frontera Sur* region has the highest level of natural water availability in the country as well as the highest total surface water runoff average.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2. Percentage of Population who have Access to Drinking Water by Region from 1990 to 2010** | | | | | | | |
| **No.** | **Administrative Region** | **Potable Water** | | | | | |
| **1990** | **1995** | **2000** | | **2005** | **2010** |
| I | Península de Baja California | 81.3 | 87.4 | 92 | | 92.9 | 95.5 |
| II | Noroeste | 89.7 | 93.2 | 95.2 | | 94.8 | 96.3 |
| III | Pacífico Norte | 78.7 | 85.6 | 88.8 | 89 | | 91.3 |
| IV | Balsas | 72.8 | 81.1 | 83.2 | 84.4 | | 85.8 |
| V | Pacífico Sur | 59.2 | 69 | 73.2 | 73.5 | | 75.6 |
| VI | Río Bravo | 91.8 | 94.4 | 96.1 | 96.1 | | 97 |
| VII | Cuencas Centrales del Norte | 83.2 | 87.9 | 90.9 | 93.3 | | 95 |
| VIII | Lerma-Santiago-Pacífico | 84.2 | 90.3 | 92.2 | 93.4 | | 94.9 |
| IX | Golfo Norte | 57.6 | 67.8 | 75.5 | 80.9 | | 84.9 |
| X | Golfo centro | 58.8 | 64.6 | 71.9 | 77.2 | | 81.2 |
| XI | Frontera Sur | 56.7 | 65.4 | 73.3 | 74.4 | | 78.5 |
| XII | Península de Yucatán | 74 | 84.9 | 91.9 | 94.1 | | 94.2 |
| XIII | Aguas del Valle de México | 92.5 | 96.3 | 96.9 | 96.5 | | 96.8 |
|  | **National** | **78.4** | **84.6** | **87.8** | **89.2** | | **90.9** |
| Source: CONAGUA 2013 | | | | | | | |

In terms of Drinking water coverage, Table 2 shows two regions that stand out for a low coverage of drinking water access: *Pacifico Sur* and *Frontera Sur.* Even though this two are neighboring regions and share similar problematic in terms of coverage, they show significant difference in terms of availability of natural water (and surface water) to remediate the problem. *Frontera Sur* region with 3.7% of the national surface holds 37% of surface water in the country.

As a state, Chiapas is tied with Tabasco in third place in terms of low drinking water coverage. This is illustrated in Table 3. Oaxaca and Guerrero (states that constitute the *Pacifico Sur* region) have the lowest coverage of drinking water in the country.

|  |  |  |
| --- | --- | --- |
| **Table 3. Poverty and Drinking Water** | | |
| **State** | **HDI 2013** | **% of Population with Access to Drinking Water 2010** |
| Aguascalientes | 0.7521 | 98 |
| Baja California | 0.7717 | 95.3 |
| Baja California Sur | 0.7851 | 88.1 |
| Campeche | 0.7291 | 85 |
| Coahuila | 0.7634 | 96.8 |
| Colima | 0.7567 | 97.3 |
| **Chiapas** | **0.6468** | **73.8** |
| Chihuahua | 0.7402 | 94.9 |
| Distrito Federal | 0.8307 | 97.5 |
| Durango | 0.7193 | 92.9 |
| Guanajuato | 0.7059 | 91.9 |
| Guerrero | 0.6733 | 62 |
| Hidalgo | 0.7124 | 87.2 |
| Jaliso | 0.7434 | 94.6 |
| Estado de México | 0.7442 | 92.2 |
| Michoacán | 0.6958 | 88.1 |
| Morelos | 0.7449 | 87.6 |
| Nayarit | 0.7425 | 88.3 |
| Nuevo León | 0.79 | 96.9 |
| Oaxaca | 0.6663 | 69.8 |
| Puebla | 0.706 | 83.8 |
| Querétaro | 0.7471 | 91.9 |
| Quintana Roo | 0.7488 | 91.7 |
| San Luis Potosí | 0.7144 | 83.1 |
| Sinaloa | 0.7504 | 90.3 |
| Sonora | 0.7669 | 94.4 |
| Tabasco | 0.726 | 73.8 |
| Tamaulipas | 0.7475 | 95.1 |
| Tlaxcala | 0.7162 | 95.6 |
| Veracruz | 0.6997 | 76.3 |
| Yucatán | 0.723 | 94.4 |
| Zacatecas | 0.7057 | 91.7 |
| **National** | **0.739** | **88.7** |
| Sources: CEIEG 2010,UNDP 2010 | | |

Also in Table 3, I have added the Human Development Index (HDI) produced by the United National Development Program for each of the states in Mexico. Chiapas has the lowest HDI in the country with 0.64 contrasting with the national average of 0.73.

According to the 2010 National Census, Chiapas has a population of 4,796,580 distributed among 118 municipalities. In terms of drinking water access at the municipal level, the Chiapas State Committee for Statistical and Geographic Information (CEIEG) provides the following information: there are 2 small municipalities (39,774 inhabitants) with less then 30% of drinking water access; a group of 8 municipalities (221,284 inhabitants) in the range of 30 to 49% of access to drinking water; 9 municipalities in the range of 50 to 59% (212,003 inhabitants); 21 municipalities from 60 to 69% (888,387 inhabitants); another 21 from 70 to 79% (782,829); 25 from 80 to 89% (1,901,747) and 32 with over a 90% access (750,556).

The data presented here demonstrates the need for safe drinking water sources in Chiapas and it creates a strong argument for the pilot project in that region based on 3 main points:

* There is significant amount of surface water sources.
* The impact in terms of poverty is relatively more significant (Lowest HDI).
* There are municipalities with strong need for drinking water access that can be targeted.

This analysis must be complemented with two additional tasks: 1) To conduct the analysis at the locality level, and most importantly 2) conduct a field survey of the needs.

1. **Local Partner Selection**
2. **Stakeholder Analysis**

As part of step 3 of the process a stakeholder analysis is required to adequately select the local partner. To analyze the stakeholders, we first have to look at the different roles involved in this project. Fig. 1 illustrates all the individual roles required in the pilot process.

Infrastructure Project

Executor

Funding Organization

Beneficiary Community

Local Partner

AguaClara LLC

Plant Owner/Administrator

Constructor

Community Organizer

Regulating Agency

Fig. 1 Participant Roles

A stakeholder can participate in one or various roles depending on the implementation model selected. For instance, a stakeholder can participate as the *local partner* and the *Executor* at the same time. In another example, the *beneficiary community* can also function as the *plant owner/administrator.* Choosing the correct combination of roles for each stakeholder is essential for the success of the project. Before going into the different implementation models, lets look at a systems thinking approach, presented in Fig. 2, to see what is the interaction and interconnection of the different roles involved.

Infrastructure Project

Executor

Funding Organization

Beneficiary Community

Local Partner

**Technology Manager**

Plant Owner/Administrator

Constructor

Community Organizer

Regulating Agency

Fig. 2 System’s Map

The arrows shown in the System’s Map above denote the different interactions among the stakeholders. These interactions can be:

1. Funding activity
2. Subcontracting
3. Training
4. Supervision
5. Service provision
6. Feedback
7. Accountability

We have 3 types of roles that participate in the system:

1. Main roles
2. Supporting roles
3. Facilitators

The main roles are presented in colored boxes:

1. Beneficiary Community
2. AguaClara LLC
3. Local Partner
4. Infrastructure Project Executor
5. Plant owner/administrator

The supporting roles are in white boxes:

1. Funding Organization
2. Regulatory Agency
3. Constructor
4. Community Organizer

The facilitators are not shown in the System’s Map. These can be organizations or individuals that help broker any of the activities described above. An example can be the W.K. Kellog Foundation setting up the relationship with local NGO’s for community organizing. In designing a pilot project, a facilitator’s knowledge of the country and stakeholder can be crucial to the success or failure of a project.

1. **Stakeholder Implementation Models**

As we mentioned above, one stakeholder can participate with one or many roles depending on their technical capacity, objectives, interest and financial muscle. Having one stakeholder participate in many roles can facilitate or complicate the implementation process. It facilitates the process because it shortens the communication network and many activities can be followed-up just with one interlocutor. Also, it makes one organization accountable for many of the results.

On the other hand, the dependency on one stakeholder for many roles and activities can be counterproductive if that organization is not generating results. In this case, changing the organization can be costly and can even lead to the failure of the project.

There are many possible combinations of implementation models depending on the roles assumed by each stakeholder. We will look at the 3 main possibilities:

1. Community based model
2. Government based model
3. Hybrid model
   1. **Community based model**

Executor

**Funding Organization**

Beneficiary Community

Local Partner

**Technology Manager**

Plant Owner/Administrator

Constructor

Community Organizer

**Regulating Agency**

Community Model

We have called it the community-based model since it has a bottom-up approach and it focuses on promoting self-reliance in terms of constructing, managing and maintaining the plant.

There are two central stakeholders to this model: the community and a Local NGO.

In this case, the NGO participates as:

* *Local Partner*: In the Community-Based Model, the AguaClara LLC would transfer the knowledge to the Local NGO. The NGO would be in charge not only of the pilot project, but also of promoting, training and supervising the usage of the AguaClara technology in the specific cluster.
* *Executor:* The capacity of an NGO participating as the executor depends on the funding program’s guidelines. For example, there are some programs that can only work through other levels of governments. Other programs in Mexico can work with an NGO as long as they have a CLUNI (Clave Unica de Inscripcion). Some work with any NGO as long as it is legally constituted. As the executor, they would be responsible for the spending and accountability, compliance with the specific regulations and hiring a contractor for the construction process.
* *Constructor:* If the community has the means of constructing the plant’s infrastructure, they can be the constructor. Otherwise the NGO will function as the hiring agent of third party constructor.
* *Community Organizer:* The NGO helps the communities organize the planning, managing and maintaining the water plant.

In regards to the community, it participates in the following roles:

* *Beneficiary community:* This is a given role
* Constructor: Some communities have the capacity use their own internal resources and skills to function as the constructing agent. This is a desirable scenario as it increases local ownership of the water treatment plant.
* *Plant owner/administrator:* The community, through a water management committee, manages and provides maintenance to the plant.
* *Community Organizer:* Depending on the level of organization and social capital (specially in the usage of water) the community can act as their own organizer.
  1. **Government-Based Model**

The government model is one of the most commonly used in Mexico but not necessarily the most effective one, mainly because of political and sustainability issues. Additionally, its top-down mechanisms do not necessarily promote or ensure local self-reliance.

**Executor**

**Funding Organization**

**Beneficiary Community**

**Local Partner**

**Technology Manager**

**Plant Owner/Administrator**

**Constructor**

**Community Organizer**

**Regulating Agency**

Government Model

The roles that a particular government agency can play depend on the government level (federal, State or Municipal) and the specific department participating in the pilot project. For instance, a municipal and state government could function as:

* *Funding organization:* Both state and municipal governments have budgets that can be invested in water treatment projects.
* *Executor:* Most federal programs´ guidelines restrict the execution of infrastructure projects to municipal and local governments.
* *Constructor*: All state governments and some municipal governments have the technical capacity, machinery and staff to build basic infrastructure.
* *Community organizer:* Local governments may have a large pool of social workers that specialize in community participation.
* *Plant owner/administrator:* as a public service, water treatment plans are generally own and manage by the state government.

Another example is CONAGUA (the National Management Commission). CONAGUA could play the roles of the *regulating agency, local partner, funding organization, executor and community organizer*.

It is also possible that the pilot project is implemented through a combination of federal and local governments. In which case, the government agencies could encompass all the roles except for technology manager and beneficiary community.

* 1. **Hybrid Model**

The hybrid model, as the name suggests, incorporates characteristics from the community and government based models. Additionally, the hybrid model integrates a third party participant that has the capacity of managing a complex distribution of roles across stakeholders.

Executor

Funding Organization

Beneficiary Community

Local Partner

**Technology Manager**

Plant Owner/Administrator

Constructor

Community Organizer

Regulating Agency

Hybrid Model

This model can take many shapes and forms. Central to the hybrid model is the role of the third party participant. A good example could be the system presented in the graph above. In this case there are 7 different stakeholders.

1. A third party participant that plays the role of the *local partner*: this agent can be a NGO, an international Institution, a private company, a foundation, a university etc.
2. An NGO or government that works as the *executor, constructor and community organizer*.
3. The *community* that participates as *plant owner/administrator*.
4. Government function as a *regulatory agency and funding organization.*
5. And finally the *Technology Manager* (AguaClara LLC).
6. **Stakeholders Options for the Pilot Project in Chiapas**

In this section we present the potential stakeholders that can play those roles in the pilot project in Chiapas according to the present information.

* *Technology Manager*: AguaClara LLC.
* *Local partner:* Local NGO, CONAGUA and UNACH.
* *Funding Organization*: Secretaría de Desarrollo Social, Comisión Nacional del Agua, Comisión para el Desarrollo de los Pueblos Indígenas and W.K. Kellog Foundation.
* *Beneficiary Community*: To be decided upon Sarah´s visit to Mexico
* *Executor*: UNACH, CONAGUA, Local NGO, Municipal Government, State Government.
* *Constructor*: This is decided after the project is approved for funding.
* *Community Organizer*: Local NGO, UNACH and Municipal or State Governments.
* *Regulatory Agency*: CONAGUA.
* *Plant Owner and administrator*: Beneficiary Community, Municipal or State Government.

1. **Investment Procurement**
2. **Policy Context in Chiapas: Potential Synergies**

The question I am going to be addressing in this section is: How does the AguaClara Pilot Project align, support or complement international, national and regional policies? To answer this question, we will be looking at the 3 most relevant institutions at each level:

* International: *United Nations*
* National: the *Mexican Federal Government*
* Local: the *Chiapas State Government*



1. United Nations: AguaClara Aligns with the 3rd Target of the 7th Millennium Development Goal: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation (United Nations, 2013).
2. Mexican Federal Government: AguaClara supports the accomplishment of the 4rth objective of the 4th Goal of President´s Peña Nieto National Development Plan (Gobierno Federal, 2013). The following tables illustrates the details:

|  |  |  |  |
| --- | --- | --- | --- |
| 4th Goal of the National Development Plan: A Prosperous Mexico | | | |
|  | Objective 4: Promote and direct a greener and inclusive growth that enables the preservation of the Mexican natural resources and at the same time contributes to the generation of income, jobs and competitiveness. | | |
|  | | Strategy 4.4: Implement a sustainable water management policy, making it possible for every Mexican to have access to this resource | |
|  | | | Specific Actions:   * Assure the provision of sufficient safe drinking water to guarantee human consumption and food security. * Improve and increase the coverage of water drinking services |



1. Chiapas State Government: In terms of the local policies, the AguaClara pilot is clearly aligned with the 2nd Theme of the 2nd Access of the State Governments State Development Plan 2013-2018, entitled *Dignified Life*. The following table describes the specific policy (Gobierno del Estado de Chiapas, 2013):

|  |  |  |  |
| --- | --- | --- | --- |
| 2nd Access of the State Development Plan: Chiapas’ Family | | | |
|  | Theme 2: Dignified Life | | |
|  | | Public Policy 1:Increase the coverage of decent housing and public services for Chiapas’ Families | |
|  | | | Strategies:   * Increase the access of safe drinking water sources and, swage and water treatment systems. |

1. **Potential Funding Organizations**

Presently, we have identified 3 potential funding organizations. The Ministry of Social Development (SEDESOL), the Commission for the Development of Indigenous Peoples (CDI), and the National Water Commission (CONAGUA). In this next section we will analyze each one and present a summary of the findings.

1. **SEDESOL**

The Mexican Ministry of Social Development can be a potential source of investment. This Ministry has a Program titled Program for the Development of Priority Regions (PDZP). This program can invest in the infrastructure, community organization and in the training or in this case the technology transfer from AguaClara LLC to the Local Partner.

According to the guidelines for the year 2013 (DOF, 2013) in its numeral 3.5.1 entitled *Type of Subsidies* (Tipos de Apoyos) letter “a” this program supports water provision systems as well as water treatment plants.

Conversely, in its numeral 3.5.2 concerning *Complementary Subsidies*, the guidelines state that training services that improve investment allocation can also be subsidized by this program.

In terms of coverage, PDZP is focalized on municipalities categorized as highly and very highly marginalized. According to the National Population Council (CONAPO, 2010), in Chiapas, 87 out of 118 municipalities fall under this category (73% of the state).

In terms of the amount of the subsidy awarded to each project (numeral 3.5.3 of the guidelines), the Ministry can fund a water treatment project with up to 5 million pesos (385,000 USD).

Finally, in regards to the executor of the projects, according to the 2013 guidelines, the program can invest through State and Local Governments and their respective agencies; public Universities and NGO’s that comply with the current regulation (DOF 2013).

1. **CDI**

The National Commission for the Development of Indigenous Peoples has a program entitled Basic Infrastructure for Indigenous People Program (PIBAI). According to the programs guidelines in its numeral 2.4.4.3 (DOF, 2013), one of the major investment areas of this program are potable water systems.

In terms of coverage, this program can invest in localities that comply with the following criteria (numeral 2.1):

* At least 40% of its inhabitants are indigenous
* The locality is categorized by the CONAPO as highly or very highly marginalized, and
* Have from 50 to 15,000 inhabitants.

Chiapas has 7,069 localities that fit this description (this localities group more than 3 million people).

Regarding the amount of the subsidy permitted in PIBAI, the guidelines do not specify a maximum for each project (numeral 2.4.2).

Finally, numeral 2.7.1 states that the only entities authorized to execute this program are federal agencies, state and municipal government as well as the CDI state office (DOF, 2013).

1. **CONAGUA**

According to the 2011 (which have not been updated since) guidelines for the Hydraulic, Clean Water, Sewer and Sanitation Infrastructure Programs, CONAGUA can invest in Clean Water Plants through the Program for the Construction and Rehabilitation of Clean Water Systems in rural areas (PROSSAPyS). Similarly to PDZP, this program has can invest in the infrastructure, the community organization and the training (numeral 8.4.1) (DOF, 2011).

In terms of coverage PROSSAPyS, the only criterion for eligibility of a locality is to be rural. Rural is defined as a locality with no more than 2,500 inhabitants. Localities with high and very high marginalization level will have preference over others.

Regarding the total amount of the subsidy, CONAGUA can invest up to 80% of the infrastructure cost for the plant, and 90% if the locality is categorized high and very high marginalized (numeral 8.4.2) (DOF, 2011).

Finally, article 11.1 of the guidelines establishes that only state and municipal department can execute projects from this program.

1. **Next Steps**

There are 3 main issues that have to be completed in the short term:

1. **Select a Local Partner**: Negotiate and agree with a local organization that will implement and promote AguaClara in the designated knowledge cluster.
2. **Target a Locality:** Find the showcase locality. Field visit different candidate localities and assess them in terms of accessibility, technical viability, local capabilities (local NGO and Beneficiary Community) and political soundness.
3. **Reach an agreement with a funding institution**: present the project, take government officials to a demonstration visit to the plants in Honduras, and agree on the investment process and executor.

# Works Cited

CEIEG. (2013). *Información Estadística.* Gobierno del Estado, Comité Estatal de Información Estadística y Geográfica. Tuxtla Gutierrez: Gobierno del Estado.

CONAGUA. (2013). *Sistema Nacional de Información del Agua*. (C. N. Agua, Producer) Retrieved December 9, 2013, from http://siga.cna.gob.mx/

DOF. (2013, February 26). Reglas de Operación del Programa de Desarrollo de Zonas Prioritarias. *Diario Oficial de la Federación* .

DOF. (2013, February 27). Reglas de Operación del Programa de Infraestructura Básica para la Atención de los Pueblos Indígenas. *Diario Oficial de la Federación* .

DOF. (2011, December 29). Reglas de Operación para los Programas de Infraestructura Hidroagrícola y de Agua Potable, Alcantarillado y Saneamiento a cargo de la Comisión Nacional del Agua, aplicables a partir de 2012 . *Diario Oficial de la Federación* .

Gobierno del Estado de Chiapas. (2013, October). *Portal del Gobierno del Estado de Chiapas.* Retrieved December 9, 2013, from http://www.chiapas.gob.mx/plan-estatal-desarrollo

Gobierno Federal. (2013, May 5). Retrieved December 9, 2013, from Plan Nacional de Desarrollo 2013-2018: http://pnd.gob.mx/wp-content/uploads/2013/05/PND.pdf

SEMARNAT. (2013). *Informe de la Situación del Medio Ambiente en México.* Secretaría de Medio Ambiente y Recursos Naturales, CONAGUA-SEMARNAT. Mexico City: SEMARNAT.

UNDP. (2010). *Human Development Reports*. (U. N. Program, Producer) Retrieved December 13, 2013, from http://hdrstats.undp.org/en/images/explanations/MEX.pdf

United Nations. (2013). *UN Millennium Development Goals* . (U. Nations, Producer, & UN Publications) Retrieved December 9, 2013, from http://www.un.org/millenniumgoals/environ.shtml