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**Supplying Water to Poor Population in
Developing Countries:
A New Contribution of Private Sector**

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This thesis was written as part of the Double Degree programme between NHH MSc in Economics and Business Administration, Major in International Business, and HEC Paris MSc in Sustainable Development. Neither the institutions and the supervisor, nor the censors are – through the approval of this thesis – responsible for either the theories or methods used, nor the results and conclusions drawn in this work.

ABSTRACT

This paper originates from the observation that private sector, here multinational companies, is changing its practices to address poverty issues in developing countries. Since water is a primary need, the new approach set in a deep involvement of the population. We first add a P, for People, to Public Private Partnership, and then look at a more discrete approach at the Base of The Pyramid. We finally discuss what does mean supplying water to poor people both from end users and company's sides.

The main findings are that success lies in the stakeholders' active participation, even co-creation. Such projects are strong levers for development and individual empowerment, but require a new paradigm embedded in companies strategies, in order to sustain these win-win partnerships.

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FOREWORD

The initial idea of writing a thesis on this subject followed the visit of the Kibera slum in Nairobi, Kenya. Here, I felt like the concept of development acquired a different meaning. This was completed with the special track I had the chance to attend at HEC organized by the Social Business chair. Who knows if I'm not to come back to this State-forsaken place where private sector could be of a strong help considering that a new business paradigm is then, more than necessary.

I hope this paper will bring hope to the readers and show, while rethinking the approach of poverty, that it is possible to push a positive contribution into development. Working on water issues in developing countries was not an easy task considering the abundant literature related to this subject, but the special focus, the participation of the people, chosen in this paper, enables to pass over controversies and to strike up a reflexion on people engagement in their own economical environment.

I choose not to split apart the description of the analysis of achievement and business in progress, to the needed changes in companies' strategies. The point of view chosen is from multinational companies undertaking such social projects, an interesting approach could also have been to analyze how local private operators are currently redesigning the water service in their own country, adapting as well the offer to the needs of the population. This may be another research paper.

As you should have noticed, this paper has been printed on both sides. It is quite unusual for a thesis as supervisors find it more convenient to read only from one side. Yet when it comes to books, we get used to reading and commenting on both sides. Besides, in order to be consistent with what we have been learning in the Sustainable Development Master from HEC, all students agreed to print the thesis on both sides. For this paper alone, given that there should be three printed copies, both sides printing will save about 100 sheets of paper. This is not much, but multiply it by 30 and you will get a more significant number. I therefore thank you for your comprehension about our decision and hope it would not prove too challenging for correction.

ACKNOWLEDGMENTS

I of course would like to thank Professor Eskeland for accepting to be my supervisor here at NHH. He allowed me to work on a subject under which I am very interested in: the continuous transformation of the approach of poverty by private companies in developing countries. He gave me this good advice to work on the water sector. This was not an easy task considering the abundant literature related to this subject, but the special focus chosen in this paper enables to pass over controversies.

I would like to thank as well Professor Tauzin at HEC who first agreed the broad scope of my subject and advised me to treat in particular the aspect of the participation in the Public Private Partnership.

I also would like to thank my mates, here at the student housing in Bergen, who gave me support during this long process of delivering a thesis.

Finally, as this paper is a final point to my so interesting studies on Sustainable Development, I would like to thank the Social Business Chair for the quality of the lecturers we were given and the deep insights we got in.

INTRODUCTION

The Millennium Development Goals signed by 102 United Nations countries and 23 international organizations in 2000 has targeted 21 targets and a series of measurable indicators for each. They include eradicating extreme poverty, reducing child mortality, improve maternal health, fighting epidemics and developing a global partnership for development. One of these targets (target 7.C) is to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. Safe water is an essential component for health and thus covers several targets. It is an essential trigger to reach the targets listed before, indeed, how come we may think of this goals and do not considered the basic need of having a safe water on a daily basis?

According to the latest United Nations assessments, the facts are that: almost half the world's population faces a scarcity of water. In developing regions, nearly one in four people uses no form of sanitation. Though access to improved drinking water has expanded, nearly 1 billion people have no access. South-Eastern Asia is the part of the world where the most improvements have been made; it faced an increase by 30% in the 1990-2008 period. The coverage has also increased in Sub-Saharan Africa but is still not sufficient. Concerning Oceania, any improvements have been recorded. The challenge has somehow remained the same as ten years ago!

The progresses have essentially been made in the rural areas but still, the gap between urban and rural areas remains big considering access to water pipes, supplied to home tap points or even clusters tap points. According to the 2009 *Revision of World Urbanization Prospects*, urbanization is projected to rise from 45 per cent to 66 per cent in the less developed regions between 2010 and 2050. In Africa and Asia, the population living in urban areas is projected to gain 2.4 billion, passing from 2.2 billion in 2010 to 4.6 billion 2050. This is not but a real preoccupation for supplying water to these new inhabitants, especially the most economically disadvantaged people, expected to settle most in remote squatter areas, far away from centre of cities where an appropriate service is offered.

There will be an urgent need to find quick and reliable solutions to serve the poor people with safe water

New ways to help developing countries are found through inclusion of the people. Inclusive business models proposed by private companies include the poor at various points in the value chain: on the demand side as clients and customers, and on the supply side as employees, producers and business owners. They build bridges between businesses and poor people for mutual benefit in the supply chain, in the workplace and in the marketplace.

The question raised is thus to understand how private companies can contribute to reach this goal, supplying water to the poorest billion people in developing countries. We chose to treat the contribution of multinational companies. Indeed, to some they are used to deal with this issue in developing countries but have the will to develop new successful markets. We think that such a new approach is not only commercial but also a new conception of corporate responsibility, which is an underlying component arising within the companies.

What we will focus on is therefore what kind of approach is necessary to succeed in such projects. Such projects require field experience more than theory; cases study and references are used as starting points to describe the new models. We will review the Public Private Partnership projects under which we will demonstrate the essential taking into account of the participative dimension of the people. We will then focus on the Bottom of The Pyramid approach. This theory brings a new perspective on the poverty and how to deal with the people. The main contribution of this analysis is to understand how the people can be actors of their development. This aspect is in fact strongly linked to the participation discussed in the first chapter. Finally, we will discuss what does mean supplying water to poor people, in that it contributes to their empowerment. The final and essential section is to look at the new paradigm in which private companies have to settle in if they want to make their contribution a success.

1. PUBLIC PRIVATE PARTNERSHIP : TAKING INTO ACCOUNT THE PEOPLE AS AN ANSWER TO SERVE THE POOREST POPULATION

11. Three Decades of Public Private Partnership

111. Description of Public Private Partnership for water service

- **What is a water service?**

A water service can be described through four main components: the nature of the good, the characteristics of the production, the characteristics of the supply and the political dimension of the service.

Nature of the good

Water supplied by local authorities, should be defined as a collective good as it is theoretically accessible for everyone and no competition exists between users. Still, considering the tariff (a tariff is not a price as it is not market driven) and the access cost to the network, water is no longer a free good. This important issue can lead to the exclusion of poor people who can face problems to pay the service and thus might be excluded from it. Then, as water networks do not usually cover the whole population area, remote areas could face problems of supply.

Therefore, as water should be a collective good, its characteristics push it close to a private good: excludability and rivalry. A relevant definition is difficult to give: collective good, common good, private good, obviously part of these three characteristics.

Characteristics of the production

As it is theoretically impossible to duplicate a **network**, water service is a monopoly. Moreover, water service face an information asymmetry between the operator and the public authority in charge of controlling the service. Indeed, public authority has no information of real production cost and it is almost impossible to control the state of the underground network.

As a consequence of monopoly and information asymmetry, public authority mainly runs water service and can thus guarantee the general interest. Areas where private operators run the service, it is necessary to enforce a regulation of the service quality in order to minimize the revenue of the operator.

Characteristics of the supply

The main goals of the contract are agreed between the local authority and the operator. The demand is though not directly expressed, as the users have no direct contacts with the operators, except through the billing. Users have moreover restricted access to information such as the quality of the good and the service but as long as water is supplied, users are satisfied. Finally, considering that there are none or few alternatives to the main operator (at least in urban areas), we might consider users as captives.

Following these three characteristics, it is a little to say that water service had mainly been supply driven than **demand driven**.

Political dimension

Water service in developed countries is considered as a public utility: full coverage of the population and even tariff. This mindset is not natural in developing countries and need a strong political decision, considering in addition that the coverage rate is still low. Water service is also a mean to frame the territory and participate as a structuring tool for developing countries.

▪ Water service management as a Public Private Partnership

Due to the specificities we listed before, public operators have historically run water services. In France and Spain, however, an alternative way of involving private companies in water operations had been emerging over more than a century. The concept was that of a partnership with shared responsibilities, in which local governments delegated the management of a water utility to a private operator while retaining the assets as public property. Various contractual forms evolved with differing levels of responsibility and risk for the private partner, ranging from

concessions to management contracts. This model of delegation is mainly the one that founded what is called Public Private Partnership (PPP).

More and more countries have chosen PPP model in which investment is largely funded by public money with the private sector focusing on improving service and operational efficiency. PPP models gather several sub models that described in the following table.

Table 1 : Task allocation according to PPP’s models. Created by the author.

		State control	Management /service contract	Affermage (leasing)	BO(O)T Concession
Term		Not specified	1-5 years	10-12 years	20-30 years
Task allocation	Technical and commercial management	Local authority	Private operator	Private operator	Private operator
	Maintenance		Local authority	Private operator	Private operator
	Renewal financing		Local authority	Private operator	Private operator
	Upfront financing		Local authority	Local authority	Private operator
	Owner		Local authority	Local authority	Local authority
	Payment	-	By local authority	By users	By local authority

The know-how of the private sector and the risk sharing are the main components of PPP's. Due to contracts agreements, private operators have strong incentives to improve the service and to achieve the best possible operational efficiency.

Table 2 : PPP, an answer to constraints and objectives. Created by the author.

	Constraints	Objectives
Public institutions	Maintain a top line for public expenses	Attract private investments to develop urban projects Improve management and modernize public services Finance the assets and infrastructures while keeping low taxes
Private operators	Limited access to risky rated projects	Keep or extend projects when public finance is shrinking Transfer risks to the public sector that could be unless unfinanced Refine overtime the business cycles

The first aim of a PPP is to establish solidarity between the public and the private sector. The solidarity is based on the interaction of the parties. Each party have a different objective but one can reach his objective only when the other's is reached too. The second aim of a PPP is to share the risks. The risk assessment is a key point in the contract, which has to make the risk supported by the most relevant actor. This risk sharing allows some projects to be launched when neither public nor private sector would have launched it on their own considering the quantity of resources required.

112. A Brief History of Water PPP's

▪ The 1980's: Public financing growth but no institutional reforms

The 1980's were promoted as the water decade by International Institutions and led to massive investments while taking into account neither any institutional reforms nor any organisational improvements such as relying on local stakeholders to expand water service coverage.

The main objective of the program was to increase the numbers of housing connected to the network. It is a quantitative goal that is limited because it does not take into account neither the practices of the people, i.e. the obvious behaviour change induced by a better access to water, nor the utility management, i.e. how the current operator set and manage such a service.

New large investments were managed by local public authority and mainly affected to build or expand large water networks in cities. It has often been over dimensioned and has not matched the real needs of the population.

Two conclusions have been drawn out from this decade. First, it has revealed that the classical approach of the water service public management was limited since the operator followed a supply driven strategy. The second conclusion is that the first conclusion is a trigger to consider the need of restructuring the institution, focusing on performance and efficiency of the water service.

▪ The 1990's: The Public Private Partnership as the relevant tool

Following the failure of the 1980's, institutional reforms have been promoted. More than technical goals, institutional and economical goals had been the main focuses. Two main evaluation principles were set during the decade, the effectiveness of the service that would have been achieved thanks to the private sector and the participation of the users. Unfortunately, this last principle have been more a way to force the population to accept a merchant model for water services more than neither empower it nor make it participate in the process.

As a consequence of introducing the private sector into the service management, new management principles were set:

- Service quality regulation through a sharp control managed by an independent organisation.
- Economic regulation: all costs (short term maintenance costs and long term investments costs) must be recovered.
- Promotion of the private sector, as a change agent to improve the service and found financial resources.

▪ **The 2000's: toward new models**

The main levers of change should be considered through the vision of development. The last evolutions of the thoughts about development are to believe in the capabilities of the people to take new opportunities offered by the level of development. The new approach is though based on an empowerment of the people that can be achieved through balancing contributions of the partners: local authority, private operator and population.

This new approach will be discussed in the next section through the study case of *Aguas Argentinas*.

12. A Relevant Case Study: *Aguas Argentinas*

121. Overview of the Partnership and Contractual Duties

▪ The contract

At the beginning of the 1990's, the water and sewage service of Buenos Aires faced a difficult path due to the tough economic crisis. Argentine government decided to liberalize the service. The contract is won by a joint venture led by *Aguas Argentinas*. In order to control the project, an independent board is created. It gathers city, region and state representatives. The mission of the board is to control the tariff, check the investment plan and be the point of contact for claims from the users. Moreover, the board has the power to charge penalties if the contract duties are not satisfied.

There were two main duties in the contract, the performance of the service and the tariff levels. Actually, both these duties were related to two different goals. First, the extension of the network to surrounding areas and second the improvement of the service. The underlying problem of the concession is directly related to the confrontation of these two goals as new connected housing were obliged to pay for the connection.

There was a gap in the contract concerning the areas that have to be newly connected to the network. These are 2 million inhabitants over 12 million in the whole urban area. There are 3 types of poor areas (Botton, 2004):

- Slums (*villas miserias*). Here there is no urban frame and the land property is informal. It represents 25% of the population of the poor areas. These areas are not drawn on the prints attached to the contracts.
- Popular areas (*barrios precarios*). Here there is an urban frame even if some constructions are not legal. It represents 25% of the population of the poor areas. These areas are drawn on the prints but due to a lack of property rights, some of the housing cannot be connected (the contract stated that a housing could be connected if it owes a property right).

- Large community buildings (*barrios armados*). These housings built in the 1950's were at that time out of date and would have benefited from a renew of the water network. It represents 50% of the population of the poor areas.

The contract agreement is surprisingly only to connect the Popular areas.

▪ **The issues**

In 1997, 3 years after the beginning of the contract, the private operator faced big amount of debt due to uncovered bills from new connected housing and denial from planned housing to be connected. Both issues are due to the high price of connection that was originally set in the contract. A new negotiation of the contract is done in 1997 entailing the following adaptations. A tax is taken over all the users in order to finance the new investments and is poured into a special found. As a consequence, the monthly bills increased for the richest people of the area and balanced out the decrease of the cost of a new connection by 70%.

Furthermore the initial objectives of service coverage were moved 10 years forward. This made the population and the board to criticise the contract and thus the private operator. The negotiation entailed then a yearly review of the tariff instead of a 5 years based review.

The results were good regarding the coverage of the network that has increased from 70% in 1993 to 87% in 2001. But the monthly bill had also increased by 53% mainly due to new investments expenses coverage.

As a conclusion in this early stage and although the contract was fully ruled under The World Bank recommendations, we can say that:

- The contract faced an economic problem due to optimistic estimations. This led to increase the tariff or decrease the investments and a right balance should then have being set.
- The board did not played a fully independent role during the negotiations.
- The acceptance of the population was one of the main issues as no contractual term was entailed to serve the poorest people as described above.

The 2001 crisis created a lot of tensions between *Aguas Argentinas* and the government, as it was not to accept a raise of the tariff, the private operator did thus interrupt the investment program. In 2002, the operator was almost bankrupt. During this tough time *Aguas Argentinas* decided to launch new programs to serve poor people. This is partly due to the need of collecting new revenues to continue the program but more of the responsibility of the operator that felt unfair not to serve remote areas just next to connected ones. The social crisis has thus led to take into account the inequalities in between the population.

122. An Innovative Partnership: a Participation Based Model

After a decade during which *Aguas Argentinas* confronted the users who could not pay the connections fees, the policy toward the poorest areas evolved to a more participation based approach of the water service. In 1999, a new entity “Community development” is created. His purpose is to suggest a good methodology for an appropriate social intervention. The entity reviewed the entire topic associated with the water service in poor areas: service regulation, professional formation and institutional enforcement.

A relevant strategy was then put in place as a method called “Participative Management Model” (PMM). PMM is split into three stages and relies on a close collaboration between both the different departments within the private operator and between the operator and the local authority:

- The first stage is for the population to express a **clear demand** of their needs. This demand is collected by the local authority and forwarded to the operator. The operator then assessed the demand according to two axes, the technical feasibility and the social feasibility. If the assessment is successful, the approval is then transmitted to the regulation board. A complete report is finally done: environmental impact, budget, and technical project.

- The second stage consists of an agreement in between the **four stakeholders**: the community, the local authority, the regulation board and the operator.
- The investment stage ends up the process. It starts with the **formation** of the community of which people will work for the project. Each stakeholder has a role in the project: the local authority is in charge of the machinery, the operator of the materials and the community of the works on field. The operator manages the project while the regulatory board is in charge of the control.

PMM allowed connecting more than 100.000 housing in less than 3 years from 2002 to 2005. As a successful following to this program, the Argentine government launch a state program in 2004 “*Aguas mas trabajo*”, i.e. work for water. It allowed connecting 300.000 more housing in poor areas of Buenos Aires.

123. Lessons Learned from the Case

The main lesson learned from this project is the difficulty or even the impossibility to finance a water service for poor people through a classic PPP. Many lessons might then be learned. We can strengthen two of them, the essential role of the communication and the need to overpass the basic role of just being a water operator.

Beyond the necessary dialogue between the stakeholders, communication has been an essential achievement of this program of social responsibility. *Aguas Argentinas* defined and implemented three layers of communication. First from an internal organization point of view, employees have been taught how to deal with social issues and sustainable development practices. Communication toward the final customer had been more honest and transparent. More than that, the communication had to be oriented toward future clients. The goal of this communication was to ensure the involvement of the community while pushing them to be part of the process, first during conception and then during the implementation of the project. Keeping information sharing between the stakeholders was a key point of the implementation success. The communication

was successful thanks to the strategy adopted by the operator. Indeed, this strategy clearly aimed at **involving** all the customers.

Secondly, the operator over passed its role of delivering a service, originally agreed. Moving out of the equilibrium designed by the contract while setting a special program with the local authorities allowed serving more people, originally put apart of the contractual scheme. This **participative** model is laid on crossed contribution of each of the stakeholders, operator, local authority, population and their representatives. Population had played an essential role, as it was fully actor of the design and implementation, thus based on a demand approach of the service.

While adding a P to PPP, thus becoming **People Public Private Partnership** (4P), the water service contract had taken into account, since the early stage, a process based on active participation of all the local stakeholders. The final goal was to strength a link between the water public service improvements through more population participation, and the empowerment of the citizens aware of their rights and duties.

Finally, we have to stress the importance of the governance here in the project. The architecture of the contract has been redesigned in order to fit the social and economic reality of the project. Indeed, the service has been considered as evolutionary and not stuck to the contractual scheme. The population originally excluded from the service had been step by step integrated into it; the goal was to make this people reliable customers since they used not to be able to pay for the water service. Then, stakeholder's involvement and participation has also been considered as **evolutionary**. Local authorities and representatives are not originally part of the contract, though we have demonstrated they are essential. While returning to the basic of a water service to poor people, the operator has focused on an extensive participation of the local actors. This has been a beginning to ensure that remote areas could have been provided with the necessary service.

13. A Definition of the 4P's model

131. A framework

We can define four main characteristics of People Public Private Partnership. These four key components may be essential to implement such a model. Beyond these components, the most important thing may be the **evolution** of the process, which has to be regarded as an empowerment of the project itself, obviously related to the local stakes. The approach of such contracts shall be defined as a territory-based approach. By territory, we mean the social and societal typology of the inhabitants.

▪ Social engineering as an essential tool

The sustainability of the project shall take into account the broadest perimeter of intervention as possible. This starts upfront to the project by different assessments.

A complete societal and social diagnostic of the different actors and stakeholders currently in place has to be done. It includes cartography of the stakeholders and how do they interact themselves. We could even define this as an evaluation of the power holders within the population. Power can exist formally or informally; this stage is though very important in order not to miss the existing levers that could support or collapse the process. The second diagnostic is to identify the underlying logic of involvement of the different actors. More than knowing who they are, their interest and involvement in the project is essential in order to use the right power, in the right place at the right time, while keeping focused on the global evolution of the project.

The intervention shall be defined as accurately as possible and the objectives of the project shared with the local stakeholders. This strategic vision of the project has to be built while taking into account the necessary participation of everyone. The interests of each one in the project have to be shared. No one could not reasonably stick to one's line and thus avoid any conflict of interest.

More than any kind of population, the poor suppose that an accurate social framework is implemented. Water has been defined as a public and private good and this suppose a special attention to social issues related to the poor. Water should be free but the service, treatment and supply, must be paid. The methodology of intervention within the poor people shall be measured regularly in a continuous learning experience: Asses, implement, monitor and re-asses again, back to the first stage.

Finally, in order to support the process, training and awareness programs shall be implemented within all stakeholder, employees of the operator and the local authorities. We can think for instance as training programs aimed at developing the users awareness of the benefits of “clean water”. This point is not but essential, more than managing to build tap points in every housing, good practices have to be explain to the future users. NGO’s are of a good help to support this kind of training programs.

- **Roles and responsibilities shall be clearly set on**

It could be obvious that in the contract, roles and responsibilities are clearly set on, but the point here is to make sure every actor is able to face up his responsibilities. As long as this point is not secured and recognized, the partnership could face some implementation problems or even some contractual disagreements.

Authorities are in charge of the public service. A water public service means to set the general sector policy and how it is organized, control and regulate. The different actors involved in control and regulation needs a sufficient power as well as the ability to stay independent in case of disagreements between the parties.

The operator is in charge of the service. The qualitative and quantitative objectives are defined with the authorities, there is no way to set unreachable standards, the idea here is to work in a participative scheme where the objectives are scalable and shall evolve toward higher standards all along the project. The operator shall communicate with all stakeholders, especially the civil society, to whom he keeps in touch regular points of progress.

International and private financial institutions are in charge of financing large investments that could not be faced both by the authorities and the final user of the service. These institutions, since they are specialists, face this essential responsibility. This principle of subsidiary is a key point in the financing of the project. Moreover, the institutions shall reinforce and step up the local authorities competences and that has to be done all along the life of the project. This allows keeping and strengthening trust between the local authorities and the operator.

Finally, the civil society should be as best informed as possible on the evolution of the project allowing it to participate in the decision process as contributors and no longer as passive beneficiaries of a service.

- **A good communication between stakeholders**

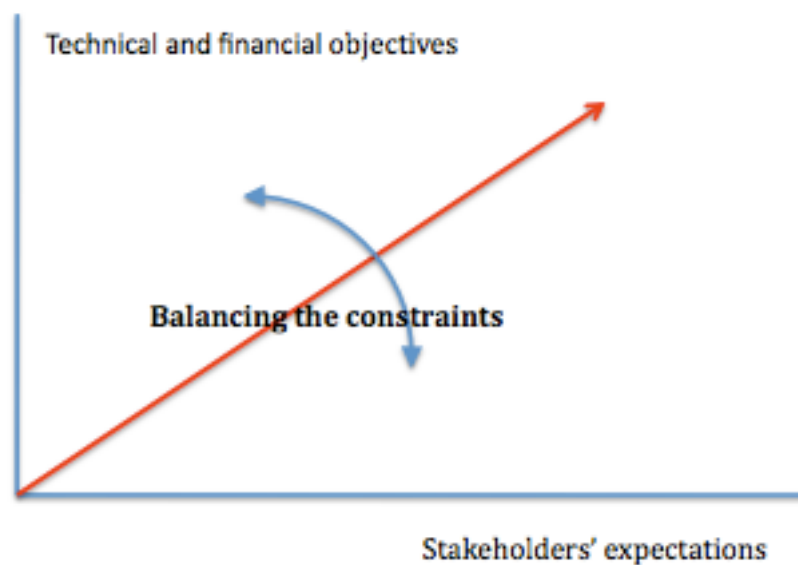
Private sector could face a lack of legitimacy. Population must accept this political and social intervention as private sector looks after a new role, being a social partner in addition to a financial and technical partner.

The private operator shall thus develop a strong network; empower the awareness of the population and explains its positive contribution to the service. Thus, communication and dialogue schemes are of important levers to keep the stakeholders participating in the process. In addition to this, the private operator shall be able to manage disagreements and conflicts. As long as development of such communication strategies are set in place, the operator will gain a strong role that help him to strengthen his link with the local authorities and civil representatives.

Local associations, NGO and development agencies are also essential for the process to gain legitimacy. They have to be strongly associated, as they well know the local context. The operator shall develop the role of these stakeholders since they are able to maintain trust between the parties.

We see obviously that everything is connected and this suppose a strong involvement of all the parties. The underlying idea here is to match the technical and financial standards of the projects to the expectations of the multiple actors. Private operator shall produce trust.

Figure 1 : Balancing the constraints. Created by the author.



- **Building up contractual and financial tools that are enough flexible to ensure the success of the partnership**

The societal dimension of such projects should be clearly laid down into the contract. This is somehow the first step that has to be done and follow up as to keep a necessary flexibility during the life of the project. A lot can indeed be done following the first assessments and due diligence, but we could never be sure on how the project will evolve and some stipulations may let open adjustments' to the initial statements.

At least two mechanisms shall be put in place. First of all, information and cooperation mechanisms will oblige each party to keep the progress of the project open to any parties. This contractual mechanism strongly settles the participative dimension of the

project. The definition of concrete objectives shall be a reachable goal. These objectives must take into account the time not as a constraint but as an essential step to build strong relationship between stakeholders.

Finally, in order to follow the progress of the contracts, key performance indicators have to be agreed since the beginning. The indicators shall not be difficult to control and have to be relevant to measure the effectiveness of the project. Easy indicators are necessarily the technical and financial ones, even the measure of the governance of the project is not that difficult to evaluate. For instance, a good indicator for governance could be the number of meetings hold and the milestones objectives set during the meetings. It could be trivial to give such an example, but experience shows that a lack of measurement of such basic indicators does not lead to efficiency. The trickiest indicator is though the social performance of the service. Indeed, as soon as we pretend to give access to water to poor people, we expressively talk about an increase of the social condition. It exists several ways to measure such performance, we will talk about that essential aspect later on in this paper.

We do not have to forget the reference of the key performance indicators. Such starting points, still in a collaborative process within the shareholders, shall be clearly agreed, recognized and write down in the contract.

- **An acceptable tariff for the water service**

The tariff must be socially acceptable. The cost should then be in regards to the wages of the users. The notion of a fully recoverable cost of the service should be substituted by the notion of an acceptable recoverable cost. It is necessary to engineer financial mechanisms to recover the expenses of the service. Both connection cost and supply cost can obviously not be charged to the poor households.

There is several ways to deal with that issue. We can think of several tariff layers of which the first one would be the social layer where the tariff is the lowest and fits to the revenues of poor people. The social layer tariff is lower than the cost of delivering; the upper layers then complete the difference. It is basically a system of equalization where

the costs are balanced among the different layers. This system can also be extended to a geographical equalization. Two solidarities in between poor and wealthy people are thus implemented: solidarity between customers and solidarity between unequal areas. Here was the solution experimented in *Aguas Argentinas* concession. The fund allowed equalizing the difference of tariff.

In addition to this system of equalization, additional taxes, loans and grants can help to achieve supplying poor people. Innovative financial mechanism could gather all of them. For instance, in 2006, the company Veolia got a grant from The World Bank and the Global Partnership for Output Based Aid (GPOBA) of 2 millions dollars for its project in Tanger, Morocco. As indicated, the project was based on his outputs. This aid is obtained only if quantitative objectives, set prior to the project, are reached. It is a powerful tool to manage efficiently the public funds both from international and local institutions while keeping a private financing. This put incentives to the private operator to fulfil the objectives.

A trivial way to lower the tariff is also to think about the cost of water –connections and supply-. Optimizing performance of the existing water network is thus an essential work for the private operator in order to lower the cost and thus the tariff billed. In reality, the objective here is to supply more water with the same existing capacity.

132. Resilience of the model

In this section, we refer to the work of Breuil (2004) who has defined three essential components for a partnership to succeed. She talks about contractual, institutional and participative pillars. We are to analyze how one component could respond to another in order to soften the constraints or to avoid a partnership to get stuck, or even to collapse. This combination of three dimensions brings resilience to PPP's projects.

- **Contractual and institutional interactions**

The institutions in charge of controlling and monitoring the project allow lowering the inherent risks when they have enough legitimacy and flexibility to play an independent and fair role in the contract. In addition to these characteristics, the integration of the users regulation boards may be a strong lever to lower political risks. The constraints of the operator might be better understood and for instance avoid oppositions on the evolution of the tariff or the raise of new taxes. Considering the users participate in the definition of the service, commercial risks, as collecting the bills may be diminished. Actually, we define here a kind of **self-regulation**.

- **Participative and institutional interactions**

The interaction between the participation of the users and the institutions is of two ways. First, the participation mode of the users may allow deadlocks and conflicts. This is a passive participation based on raising awareness and consultation for assessing the demand. The participation in the connections works could also be taking into account as a mean to lower the costs. Secondly, the users have the opportunity to be part of the regulation boards and others controlling institutions. This is a strong mean to lower the transactions costs raised from inherent conflicts in multi-actors projects.

- **Participative and contractual interactions**

The risk the users challenged the contract has to be taken into account. When the users co-define the service with the local authority and the private operator, they clearly modify terms of the contract. It is not but an important aspect of too much participation. An equilibrium shall be found and still be enough flexible to follow the evolution of the project.

▪ Resilience

We see clearly that the three pillars, contractual, institutional and contractual, vary from one project to another, but beyond this, do not have to be defined independently. The resilience of the model comes from a good equilibrium among the three dimensions, for instance:

- If the risk beard by the operator is increasing, the consistency of the model requires a legitimate and flexible institutional board.
- If the operator shares too many risks, participation modes shall strongly support the initiative to keep the model resilient.
- A model where little risks are beard by the operator could be balanced by a passive participation of the users.

Fine social and contractual engineering is thus a key factor of success for **People PPP**.

2. BEYOND THE PPP, THE PRIVATE SECTOR HAS LOOKED FOR OTHER WAYS TO DEAL WITH THE WATER ISSUE

21. The Bottom of The Pyramid

211. Presentation of the Theory

- **The theorists**

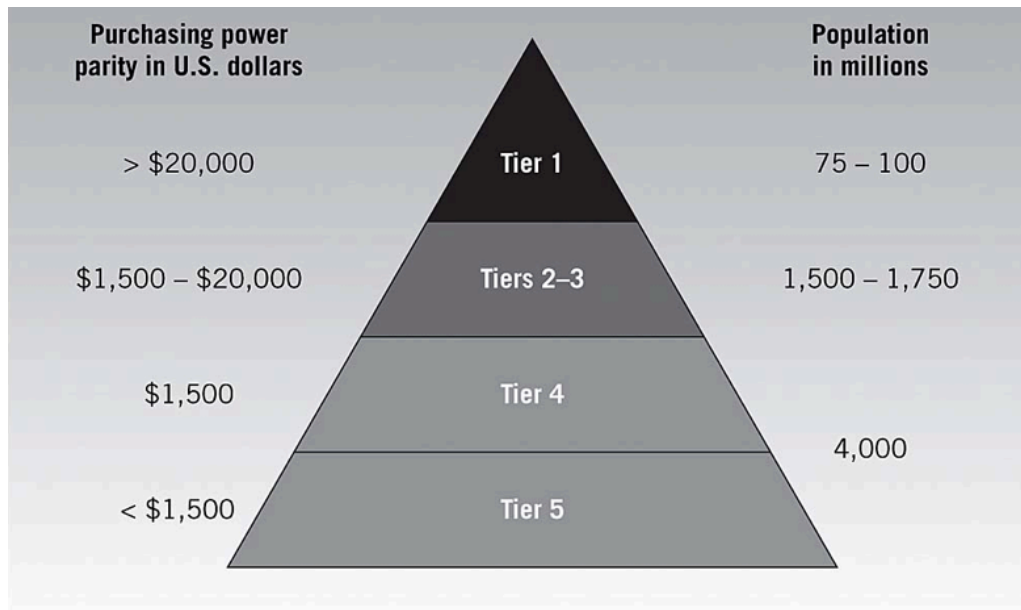
C.K. Prahalad from the University of Michigan and Stuart L. Hart from The Cornell University wrote the article *The Fortune at the Bottom Of the Pyramid* in 2002 in *Strategy and Business* magazine. This article is considered as the first step toward the concept of the Bottom Of the Pyramid (BOP). The authors considered that the business could give an answer to the problems of poverty and the basic needs of the poorest people in developing countries.

The book *The Fortune at the Bottom Of the Pyramid: Eradicating poverty through profits* written in 2004 and *Capitalism at the Crossroads* by Hart in 2005 followed this article. We are going to present the main points of the BOP theory based on these books.

- **The theory**

The distribution of wealth and the capacity to generate incomes in the world can be captured in the form of an economic pyramid. At the top of the pyramid are the wealthy, with numerous opportunities for generating high levels of income. More than 4 billion people live at the BOP on less than \$2 per day.

Figure 2 : The purchasing power pyramid. Prahalad, 2004.



The important idea here is not to discuss on which segment of population this concept focus on, whether bottom million people, the middle pyramid or the aspiring middle class. What is important then is to quit the idea that poor people are victims of the market or even burdens. Poor people have to be considered as resilient entrepreneurs, value-demanding consumers and even beyond that as partners for developing business that can alleviate their own poverty.

- **The power of dominant logic**

We are all prisoners of our own socialization. The lenses through which we perceive the world are colored by our own ideology, experiences, and established management practices. Each one of the groups that is focusing on poverty alleviation—the World Bank, rich countries providing aid, charitable organizations, national governments, and the private sector—is conditioned by its own dominant logic.

Let us present the main logic:

- The poor have no purchasing power and do not represent a viable market. If we take nine countries—China, India, Brazil, Mexico, Russia, Indonesia, Turkey, South Africa, and Thailand—collectively they are about 3 billion people, representing 70 percent of

the developing world population. In purchase power parity terms, this group's GDP is \$12.5 trillion, which represents 90 percent of the developing world. It is larger than the GDP of Japan, Germany, France, the United Kingdom, and Italy combined. This is not a market to be ignored.

- Distribution access to BOP markets is very difficult and therefore represents a major impediment for the participation of large firms. The large growth of urban areas will allow for distribution opportunities.
- The poor are not brand-conscious. On the contrary, the poor are very brand-conscious. They are also extremely value-conscious by necessity.
- Contrary to the popular view, BOP consumers are getting connected and networked. They are rapidly exploiting the benefits of information networks.
- Contrary to popular belief, the BOP consumers accept advanced technology readily.

Table 3 : Typical assumptions of Multinational Companies (MNC's), Prahalad, 2002.

Assumption	Implication
The poor are not our target customers; they cannot afford our products or services.	Our cost structure is a given; with our cost structure, we cannot serve the BOP market.
The poor do not have use for products sold in developed countries.	We are committed to a form over functionality. For instance, the poor might need sanitation, but can't afford products in formats we offer. Therefore, there is no market of the BOP.
Only developed countries appreciate and pay for technological innovations.	The BOP does not need advanced technology solutions; they will not pay for them. Therefore, the BOP cannot be a source of innovations.
The BOP market is not critical for long-term growth and vitality of MNCs.	BOP markets are at best an attractive distraction.

212. The Key Success Factors for Market Development

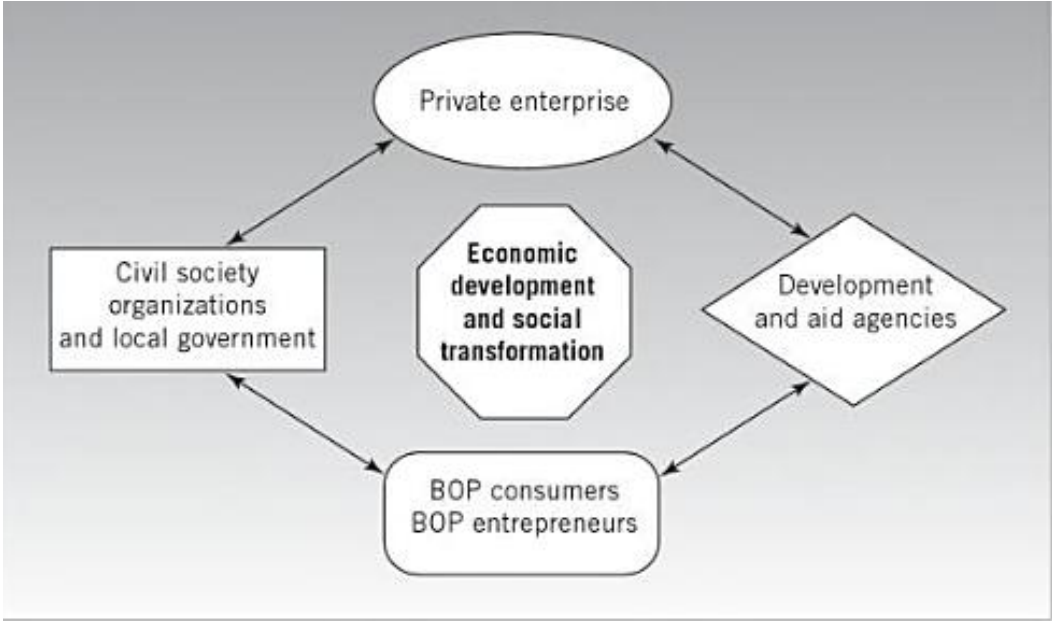
We can sum up the BOP market this way: in our developed countries, there is already a market and the main task of our companies is to create a need for new products and services among the consumers. In developing countries there is no market but huge needs, primarily basic needs. The main task and challenge is thus to create a market. This is a complete change of **paradigm** for MNC's. Prahalad presents four factors that are essential to reach the customer and therefore to develop a market. This approach is obviously related to the strong link that exists between a firm and his customer.

- Create the capability to consume while enhancing product and service innovation and rethinking the couple price/performance. That means an **affordable** price for low incomes housing. An easy **access**, distribution patterns for products and services must take into account where the poor live as well as their work patterns. **Availability**, which means that the poor cannot differ their buying decision, as they do not save money.
- BOP markets are perfect to **innovate** since the poor consumers have high expectations concerning the product that just fits their needs, quality, quantity and packaging. This is a really good opportunity for MNC's as long as they are ready to switch their mindset.
- Poor people suffer of a lack of **dignity**. As soon as they buy products or services they acquire attention of dignity and choices from the companies.
- **Trust** might be one of the most important aspects of the work firms have to do. Indeed, private firms and consumers have not trusted each other and they have to focus on building strong trust relationship between themselves and the consumers.

In addition to these factors related to the private firms willing to create a market, the need to build a **wealth ecosystem** is far more the most important key point. Wealth ecosystem is derived from nature ecosystem and means a community of shareholders, private firms, associations, local entrepreneurs, NGO's, local community representatives, administration and consumer embedded in the economic environment. Because the BOP as long been under served, it is fragmented and firms need to spend a lot of energy

in building an appropriate system that can let the market to scale out. This new inclusive market leads to increase the opportunities to reach more and more people as consumers.

Figure 3: The wealth ecosystem and interaction. Prahalad, 2004.



The main point, as we have seen, is for firms to find new business opportunities for growth while the main business focus is to alleviate poverty or at least be an active actor in this challenge.

22. The Procter and Gamble Case

221. The Approach

The P&G Health Sciences Institute, a dedicated institute of P&G, is dedicated to identifying, developing and using leading health care technologies in the development of effective products for both the developing and developed world. One aspect of their work is looking at the more than 1 billion people who do not have access to safe water.

P&G approach is to provide water directly in people's home. This point-of-use (POU) model, combined with safe storage, has the advantages of **cost**, immediate **availability** and **ease** of distribution. It is recognized that POU water treatment and safe storage at the home provide significant health benefits by reducing the incidence of diarrhoea in developing countries.

There is evidence that simple, acceptable, low-cost interventions at the household and community level are capable of improving the microbial quality of household stored water and reducing the attendant risks of diarrheal disease and death.

The aim of PuR is thus to create safe drinking water through the removal of pathogens and the use of disinfectants in turbid waters. P&G believed that if it can provide affordable products that meet a real consumer need, then there will be demand for these products in the developing world.

▪ The product

The PuR product was developed based on tests with thousands of consumers in developing countries. These consumers said they wanted visible signals that the water is cleaner, at-home control, and expect an affordable product.

The PuR product uses the same ingredients as a normal water treating plant. The **innovation** here is to bring home, the same service; that is purifying water, in a single sachet. The **packaging** of the product in small sachets that sell well in developing

countries are also an innovation. They are convenient to store over long periods of time and thus can be kept for emergency use. One small sachet, costing about US\$ 0.10, can treat 10 litres of water (enough drinking water for an average family for two days), is an acceptable price per litre. Sachets can be used as many as possible to fit the needs of water demand at home. Considering a developing country where drinking water is only used to drink and not for every use at home, this brings a real service to poor people. Though, in order to be **trusted** by consumers, the effect of the PuR product is to be **visibly** seen. Then:

- It visibly separates the cleaned water from the murky masses while providing residual chlorination.
- It remains visibly stable, providing potential for long-term consumer use as well as for providing emergency water.

As to be **easy to use**, the water purification process involves implements that consumers normally have in their homes:

- Add 1 sachet to 10 litres of water and stir to begin process of separating the cleaned water from the murky masses.
- Stir water for 5 minutes until clear.
- Filter water through a cloth and dispose of separated floc.
- Let clear water stand for 20 minutes to allow for complete disinfection.
- Store in a suitable container to prevent recontamination.

▪ **The distribution test**

A **market-based** approach has been implemented to test POU products. Three separate complementary models have been explored to learn how to best make POU products **available** and how to develop a **wide enough** market. These three models are, a commercial model led by the private sector, a social model led by non-profit organizations, ,an emergency relief model led by relief organizations.

The commercial model leverages the technology innovation and distribution and

marketing infrastructure of the private sector, combined with advocacy, education and research efforts by collaborating groups to build **awareness** of the need to properly treat and store water. This model has been explored in initial commercial test markets that were conducted in Guatemala, the Philippines, Morocco and Pakistan. Specific activities include a scientific symposium and outreach to build awareness, local training sessions involving village health workers, and health intervention trials.

In addition to the commercial model, P&G ensured the product can match other needs. The emergency relief model involved product distribution along with education materials, typically by a relief agency. The treatment system has indeed several advantages for emergencies including long-term stability so the product can be stockpiled in areas of frequent disasters, ease of transport and robustness to treat water. In some countries, a social model may have been most appropriate due to economic and infrastructure constraints that limit the commercial model. The social model involves the use of established social marketing distribution channels by non-profit organizations as well as a social network approach with local NGOs and Ministries of Health for instance. This model is being used effectively in many parts of the developing world to provide important health products.

The innovation in this project lies in the three different models P&G has used to approach emerging market opportunities. P&G has used the strengths of all the stakeholders in each market to understand the factors that can lead to a commercial success.

222. Lessons learned

- **Challenges and results**

The main challenge faced by P&G was to sustain a consumer habit shift. They believe, partnerships are essential to make the product part of the household consumption of

water. Many tests have been done, especially in Guatemala on more than one thousand households. Then, there is no doubt about the efficient effect on decreasing the rate of diarrhoea within the communities. Consumers describing their experience with PuR reported clearer water and find the process simple to use. They also find the pricing acceptable. It is clear, however, that **educational efforts** including product demonstrations are necessary to encourage a consumer habit change.

▪ **Failure and lessons learned**

Point-of-use drinking water solutions using a market-based approach require broad collaborations involving the private sector, governments, NGOs and research institutions in order to provide effective education, marketing and product distribution. A one-time educational program did not bring though enough widespread regular use of any of the point-of-use interventions; reinforcement was critical.

The development team did everything required to enter a new market, seeking out input from thousands of low-income consumers and visiting the homes of poor people and villagers to understand their needs. They launched tests around the world and used local health workers to help get the word out. The final product, meanwhile, seemed perfectly suited to the potential customers. It was also simple to use and shelf-stable, an **important factor** given the **distribution** challenges to rural villages.

But PUR was a commercial failure. Three years of test marketing in four countries returned mostly low penetration rates as well as a weak return on investment. Why did all the market research go wrong?

There are mainly three components that led to this failure:

- It is still tough to make the people using the product on a **daily basis**. This people would have had to learn more about bacteria's, invisible in clean water and had to get used to what clean water looks like. P&G faced here a problem of education. They did not take into account the gap that happened after the tests. Indeed, when people are

no longer supported, they go back to **former habits**. P&G tried to **give sense** to the people but this does not work when people cannot **make sense** on their own.

- The social component in the households is another important point that P&G missed. We argue the problem of the payoff between the product and others needs.

The company agreed that the real hurdle to cross when introducing a new product, in any market, is helping the consumer **understand the benefit** of doing something in a different way.

But the company said it couldn't sustain on its own the educational efforts on the scale needed. To its credit, P&G turned a story of commercial failure into one of philanthropic success. Since 2004, the company has donated or provided at cost hundreds of millions of packets of PUR to relief efforts and nonprofits.

▪ **Business With the People**

How can companies overcome consumer inertia at the Base of the Pyramid? A typical strategy is trying to change people's mindset and behaviour through an educational campaign, but is often a long, uphill battle that requires widespread and sustained messages. Instead, companies should start by getting the community involved in **creating, implementing** and **shaping** the business itself. The sense of ownership this brings will help ensure that interest in the company's product will be widespread and sustained. This is the underlying idea in the BOP protocol we describe in the next section.

23. The BOP 2.0

231. The innovation

The innovation brought by Stuart L. Hart at Cornell University is more a method than a theory, but it is a deep following to the BOP theory presented before. As many BOP projects have not fully filled their expectations, some searchers, as Hart, insists on the notion of **co-creation**. The main idea is to build a product or a service with the population targeted. It requires several phases; observation and dialogue are of the main. This co-creation process allows giving an appropriate answer to the real need of the population, future customer/consumer.

The BOP protocol, developed by the Global Center for Sustainable Development at Cornell University from which Hart is the director, gives us a framework to develop the appropriate market for the poor. A complementary idea is no longer to adapt a product or a service to the BOP market but to understand how some existing products or services can be used in a different manner and thus allowing giving a targeted answer to the real need of the population.

To illustrate that process, we propose to briefly review the work that is currently done by the company SC Johnson. SC Johnson sells products to clean the toilets. Instead of simply selling the product (with a different packaging for an affordable price as P1G did), the company is trying to understand how the population can **make sense** of the product on its own in a completely different environment. Here, the Kibera slum in Nairobi, Kenya, has been chosen. SC Johnson analysed, even ethnologically, the underlying mechanisms of exchanges within the community in order to embed the product in the socio-economical pattern of the community. This necessary work makes them understand that publicly shared toilets were not cleaned up because any household wants to do a work that benefits the community. Sc Johnson thus created a network of micro-entrepreneurs selling the service of cleaning and buying the SC

Johnson product. We shift from a product to a service that benefits the whole community and gives an appropriate answer to development.

We understand this work requires a heavy work of dialogue and communication, a deep interaction with the local population to find an optimal use for a specific product. We thus may think that this co-creation process shall put some barriers to replication. This is in fact, all the work that has to be done, a deep adaptation to local environment and constraints. Developing countries' markets are not the one we are used to in developed countries. A broad product or service launched on **the** market is quite impossible, at least for the product/service we are dealing with and the goal we want to reach. Developing people through business obviously pass by community empowerment, which are as many resilient markets on the path towards more interaction with each other's.

232. The protocol

As a following to the co-creation process, we now present the full protocol developed by Hart. The protocol is divided into three stages; which are a pre-field stage, the in-field stage and the scaling-out of the business in an open source way.

- **Pre-field stage**

First and essential is to choose the appropriate BOP project site. Choosing several sites may also be worth to enhance **extensive sharing** between the communities and can later serve as a source of solidarity. Then, the formation and training of a multi-disciplinary corporate field team and finally the selection of community partners. To ensure this process has the maximum benefits and values, it is necessary to create enough space to think out of the company's box.

- **In-field stage**

The in-field stage consists of three different phases; each of them has two main components, **enterprise co-creation and market co-creation**. It is obvious that one enterprise cannot work without any market, and equally. This strong link between business and market is probably, through co-creation process, the main contribution to the initial BOP theory. Importantly, the process establishes a local community team with the ability to eventually manage and lead the new business independently as the company will focus to develop and embed the business in other communities.

The phase 1 is called “**Opening up**”. It begins with the immersion into the community in order to create trust between the people and the company. The company then recruits a recognized community representative who is committed to work hand in hand. This representative shall represent the community diversity as the business project is created to serve all parties. Then can follows some participatory workshops made to ease the understanding of each party and to share a common language on business and ideas. This phase terminate with the rise of a co-creation idea built during the workshops; it brings people together toward a practical and actionable business concept.

The phase 2 is called “**Building the Ecosystem**”. It begins with a project team comprised of company members and motivated community members. The team are committed to build the business prototype in a rich and shared vision and has the responsibility of its success. The prototype is then reached out to the wider community thus creating “buzz” around the business.

The phase 3 is called “**Enterprise creation**”. Using small-scale tests and continued action learning, this phase aims to create the full business model. The local market starts through engagement of the wider community in the process. The team is then in charge to teach and eventually lead the new businesses that can now grow up within the wide community. It allows the team to improve his management skills and thereby bring self-confidence into the community. They are now able to create a business that

serves them. The company obviously ensure of the success of this replication in other geographies. The output of that phase is a business embedded in the social fabric of the community.

- **Scaling out**

Scaling-out may be one of this stage that bring the company enough market room to ensure a sufficient return on initial investments, and more than that on initial commitment. It may also give the poor people a lever for their development. The key success factors for the replication of the model is to open source it. Hart call this the “open pollination model” that draws both on creation and discovery. In open pollination, plants propagate through the natural mixing of pollens from the population. This open form of crossing builds the plant’s genetic variability, thus creating a robust and adaptable base to local conditions. The same principle is used to replicate the local business project.

233. Resilience

We think as essential, again, to stress how this model could be resilient. Local adaptation and co-creation are the main components. The resilience of such projects lies in the population to appropriate the business. The business matches the community needs and the population is able to implement and run it. The community, or the business, is not dependant of external conditions, but of internal willing. The interaction with other business in neighboured communities should add more spring effect in that external constraints could be supported on a larger scale. The replication of the projects brings thus an exchange of good practices between communities, as well as trust and commitment to sustain wealth creation. One more time, the participation of the population, or rather the involvement of the people is the key success factor for both the

business and the fight against poverty. The essential co-creation component add with the latest work of Hart is

As a conclusion it is worth to sum-up the evolution of the BOP from the initial theory to the BOP 2.0.

Table 4: From BOP 1.0 to BOP 2.0. Hart, 2008, modified by the author.

<p style="text-align: center;">INITIAL BOP THEORY</p> <p style="text-align: center;">SELING TO THE POOR</p>	<p style="text-align: center;">BOP 2.0</p> <p style="text-align: center;">BUSINESS CO-VENTURING</p>
<ul style="list-style-type: none"> - BOP as a consumer/producer - Deep listening - Reduce price points - Redesign packaging, extend distribution - Arm’s length relationships mediated by NGO’s - - 	<ul style="list-style-type: none"> - BOP as a business partner - Deep dialogue - Expand imagination - Many capabilities, build shared commitment - Direct, personal relationships facilitated by NGO’s - Co-creation, commitment and appropriation - Resilience

Such models have not really emerged under the BOP 2.0, though, we will give an example in the third chapter of a “social” business run by the famous Grameen company which uses a lot of what we have learned in this chapter.

3. GIVING ACCESS TO WATER IMPLIES MORE THAN JUST PROVIDING SAFE WATER

31. What Model to Give Access to Poor People?

311. Models Interactions

We have seen so far the complexity of giving a relevant answer to the water supply. The two approaches presented may have seen different in that there are not scaled on the same level and this may lead to split them into an urban approach and a rural approach. Indeed, considering that the 4P model is based on a water network, it is in developing countries an urban area model. Though, we consider this assumption as restrictive toward the powerful of the participative component of the 4P model. This new axis has proved how much it can serve the poor while improving the necessary relationship between stakeholders. Furthermore, the co-creation dimension identified in the BOP protocol is not far from the participative dimension, which could almost be in special cases a co-operation, without saying a kind of co-creation.

We argue then that giving access to poor people is much more a model based on a service approach than on a good approach. By service approach, we mean somehow that water should be delivered on water point; this is finally how humanity has been used to do it. Water points does not mean exclusively that each household needs a water point at home; think for instance that there is still a lot of water wells used in developing countries. These gathering points are not but a mean for people to exchange and to strengthen the social capital within the community.

There is still not one approach that can best fit the needs of the poor people in developing countries both in rural and urban areas. A lot a lessons and good practices have to be learned from the two models presented. Actually, the social approach embedded in the two models is a powerful tool to achieve the goal of switching people minds toward water, this common good to a collective and private good.

The three dimensions, institution-based, contractual based and participative based derived from the 4P's model are in a way applicable to the BOP approach. This seem relevant to compare the models through these, it is clearly a reference to the wealth eco-system presented. The figure below presents a comparison of both models. We add as well the internal point of view of the company, that is, what business model is used.

Table 5 : Comparison of the models. Created by the author.

Dimension	4P's model	BOP model
Institution	Local authorities. Population as an essential stakeholder in special cases.	Non-official institutions as special partners and parapet.
Contractual	Both with the local authority and the population served.	Trust between private company and customers and among customers. Moral contract as essential.
Participative	People as actors of the partnership and no longer simple users. Could be a co-creation of the service.	Co-creation and deep dialogue. Empowerment of entrepreneurship.
Business model	Demand based model with essential focus on people expectations.	Demand based and co-creation model and special characteristics for addressing BOP markets.

We think that relying on this participative approach is not but the essential point to manage to supply water, expecting that this is a commercial service. Either a complex context, supporting heavy infrastructure than a lighter one may start with this phase. Assessments, deep dialogue, relevant representative and recognized institution are all part of the process. As starting point, they are also part of the process during the lifetime of the project.

A “mixing” model is finally one where the population is clearly an actor more than a stakeholder of the project. It is then clearly relevant to use the two others dimensions to analyze how to sustain other private initiatives.

312. One step forward to a scalable water service

The company Veolia has launched in 2008 a joint venture with Grameen. Its goal is to supply water to remote poor villages in Bangladesh where the water quality is far below the international standards. The problem faced by this village is the pollution of the ground water resources normally used by the people. The model chosen fits the local conditions as water is supplied through stand pipes and a dedicated network, no domestic connection is forecast at that stage but tap point located in clusters. Veolia provides the technical know how and the transfer of technology while Grameen provides its local knowledge and networks in rural Bangladesh for the success of this project. Veolia build and operate several water production and treatment plants. The technology used for the plant is just what is necessary to treat the water according to the World Health Organization standards. The villagers are trained to use the network and some of them are employees of the joint venture. The model of the project is summed up in the table below. The four components identified in this paper are used to stress the essential points of the approach.

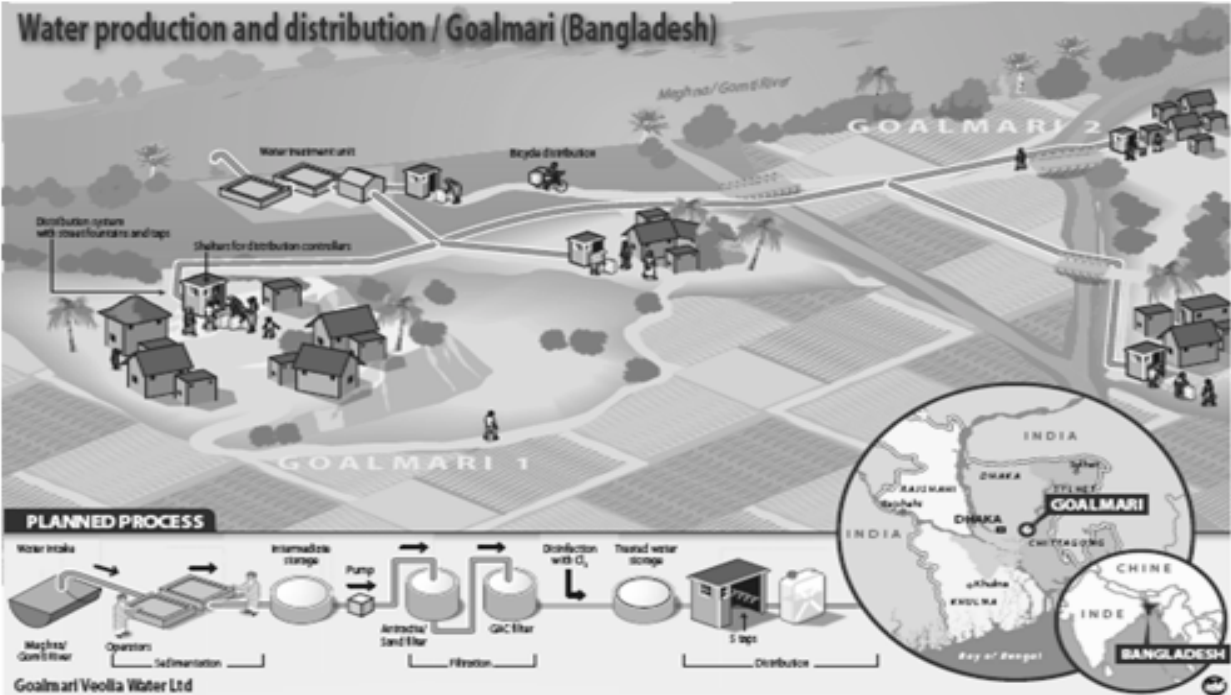
Table 6: Goalmari’s water service framework. Created by the author.

Institution	Grameen as an “official” institution considering how well known and active it is in Bangladesh. It is both the parapet and the catalyser of the initiative.
Contractual	Veolia has a moral contract with Grameen and the population. The more trust is embedded in the project, the more the project is successful and scalable. The responsibility of Veolia toward its own business is essential.
Participative	Population is part of the project. Dialogue and consultation to fit the needs and the habits. People are taught and trained to understand the benefit of “safe” water and to use the service. People as employee’s of the company. People self-carrying empowerment. Transfer of technology.
Business model	Demand based model tailored made to answer the needs. Tap points are here located in clusters, simple construction. It is an adaptation of how Veolia normally offers a water service. Many distribution schemes are set in place to fit several areas.

The first project takes place in Goalmari, a village located 100 km east of Dhaka. Goalmari's population is about 25 000 inhabitants. The plant provides water via a pipeline network, to tap point located in clusters. Goalmari network reaches first the poorest part of the population.

Further studies are done to expand the supply. To provide the water to further isolated area, some other distributing systems are being studied, like rickshaw water transportation. The water will be further distributed by stand pipes where local entrepreneur's can dispense the water at certain times during the day when people bring there pitchers or jars. These points will be located at key areas of the villages. The water could also be transport at a slightly higher cost by an Auto rickshaw fitted with a water tank to people who prefer to travel the least to collect there and have a higher disposable income. These studies, shared with the inhabitants are made to best fit their habits.

Figure 4: Water and distribution. bopobs.com.



32. The Point of View of End Users

321. Social Capital and Empowerment

When we talk about supplying water to poor people, we have to understand, from the point of view of the users, what does that really mean. In the specific approach we discussed, we stressed the essential contribution of the participation. Such projects are thus more **inclusive** and allow people to develop. Business works for development.

We can draw two main benefits from supplying water to poor people. The first one is obviously, as water is treated or at least collected in a safe resource, the improvement of health. We are not to discuss this point further more. The second benefit is logically a new environment where people gain dignity and can enjoy a better lifetime thanks to basics needs fulfilled.

Doing business with the poor improves their lives. Poverty is best understood not simply as a lack of income, but more fundamentally as a lack of meaningful choices. Mahubul Haq, founder of UNDP's Human Development Report, explains: "The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives."

This can be referred to social capital, a notion that has first appeared in Lyda Judson Hanifan's discussions (1916) of rural school community centres. He used the term to describe « those tangible substances [that] count for most in the daily lives of people ». Hanifan was particularly concerned with the cultivation of good will, fellowship, sympathy and social intercourse among those that "make up a social unit". The work of Robert D. Putnam (1993; 2000) launched social capital as a popular focus for research and policy discussion. The World Bank has also picked up "Social capital" as a useful organizing idea. "Social capital refers to the institutions, relationships, and norms that

shape the quality and quantity of a society's social interactions... Social capital is not just the sum of the institutions which underpin a society – it is the glue that holds them together” (The World Bank 1999). We can then say that increasing social cohesion is critical for societies and communities to prosper economically and for development to be sustainable.

We quote Putman to explain why social capital is important:

- First, social capital allows citizens to resolve collective problems more easily... People often might be better off if they cooperate, with each doing her share.
- Second, social capital greases the wheels that allow communities to advance smoothly. Where people are trusting and trustworthy, and where they are subject to repeated interactions with fellow citizens, everyday business and social transactions are less costly.
- A third way in which social capital improves our lot is by widening our awareness of the many ways in which our fates are linked... When people lack connection to others, they are unable to test the veracity of their own views, whether in the give or take of casual conversation or in more formal deliberation. Without such an opportunity, people are more likely to be swayed by their worse impulses.
- The networks that constitute social capital also serve as conduits for the flow of helpful information that facilitates achieving our goals... Social capital also operates through psychological and biological processes to improve individual's lives... Community connectedness is not just about warm fuzzy tales of civic triumph. In measurable and well-documented ways, social capital makes an enormous difference to our lives.

His conclusion is that the possession of social capital held great significance in terms of human wellbeing.

We have seen so far that the contribution of the private sector through a population-focused approach is to empower the social capital of the communities and of its individual. Indeed, while enhancing cooperation, contribution, participation and involvement into the social network, people are able to engage in informal social activities. Interaction enables people to build communities, to commit themselves to

each other, and to knit the social fabric. A common goal, that is to move forward together toward a better life is a true glue for mutual trust. The dimensions of participation process are thus on different levels that all contribute to a better social capital. Ties between people and different groups in motivating project are strong levers that enable people to have access to more resources available for the community. Business really works for development when capable of changing paradigm and taking into account the real target for a sustainable business. People are this cement that will sustain a long-term cooperation for an inclusive business.

322. Measuring the Benefits

As more and more social contribution is brought to developing countries and communities, we now face the issue of measuring the contribution. Linking to the social capital, intangible contribution is not but hard to measure. Burdge and al have defined social impact, in 2004. Social impact are the « (...) consequences to human populations of any public or private actions that **alter the ways in which people live, work, play, relate to one another, organize or meet their needs and generally act as a member of society.** (...) Also includes cultural impact involving changes to the norms, values, and beliefs, that guide and rationalize their cognition of themselves and society ».

The measurement of the impact is to review the social and societal effects of development interventions like supplying water. The measurement includes analyzing, monitoring and managing the expected and unexpected, both positive and negative consequences of the intervention and any social change process invoked by the intervention.

Based on the NONIE guide, 2009, we can list the key concepts for a social impact assessment:

- Identify the type and scope of intervention. After having defined the problem addressed and the ecosystem of the action, the following questions shall be answered, impact of what on what? And impact on whom.?

- Agree on what is valued. It is necessary to target the most relevant impact that wants to be assessed rather than assessing all the impacts. Choices have to be made between, direct and indirect, intended and unintended, short term and long term.
- Carefully articulate the theories linking interventions to outcomes. Before launching a project, the logical theory shall explain how the intervention will lead to the desired effects. The value chain shall be reversed, meaning that the best social outputs shall be defined to lead to the outcomes previously defined.
- Address the attribution problem. It is necessary to extract from the outcomes what is really due to the intervention.
- Build on existing knowledge relevant to the impact of interventions. The goal of social impact assessment is also to learn. Using a methodology helps compare the intervention relatively to others in other contexts, and learn from this comparison.
- Turn evaluation into action.

Concerning the social impact brought by the water supply, relevant contributions are given by the work done by The Abdul Latif Jameel Poverty Action Lab (J-PAL), which has used randomized evaluations on the “social connections” project in Tanger, Morocco. We are not to discuss the method used by the lab but based on its work we are able to propose the main social impacts of water supply. The categories below may seem relevant.

- Social integration. Water issues support internal conflicts within the households. As soon as water is reachable, these problems may disappear. Having access to water make the household a holder of something finally intangible, in that the family is more respected among the community. Respect means that the family gain a special status within the community; they are more trusted leading to be recognized as it.
- General satisfaction. It is obvious but truly recognized. This feeling could be explained by the fact the families have the sensation of being no longer excluded, something like becoming “normal”, independent.
- Quantity of water used. Water is no longer an issue, seeking, collecting and carrying. Thus more water is used for the benefit of health and life conditions.
- Time economies thanks to a more reachable tap point.

33. A New Paradigm for the Companies Involved

331. From Corporate Social Responsibility to “Social Business”

Firm strategy is the mean to get or keep a particular position in the market and this position should lead to acceptable return on investments and level of profitability. This is basically the investors' and thus the firm's perspective. The stakeholder's perspective is rather considering the success of a business strategy as satisfying the stakeholder's expectations. Corporate Social Responsibility (CSR) is to shape the larger society, comprising multiple communities and the environment as well; it is how firms address the challenges of sustainable development.

CSR can be treated at different levels, the “Social Business” (SB) is the one that firms is playing according to the analysis we did in this paper. CSR as long been treated as “give something” (philanthropy) to the society or even “give to get”. It is about doing while keeping an eye on getting back something out of this commitment. Firms tend to go beyond these ideas and integrate CSR in the strategic plan as a tool to reinforce strategic positions and develop new markets opportunities. Getting to that point, when CSR is not just incidental to the firm but central to it, we argue that such firms are engaged in a Socially Business. The paradigm here switches toward “doing and getting”.

Doing business that is socially beneficial is to create market space for such activities as we approach this point in the paper. Obviously, such firms do no forget to “get” in terms of return on capital employed but in a new market room that allows creating and experimenting. Time is less restrictive that before as long as this kind of firms is single player on these new markets. Time may be the opposite, as firms need it to launch and control new projects that serve a socio-economical goal. The aim is indeed to profitably serve disadvantaged people trough innovative services and products that are financed, sourced, delivered and priced keeping in mind the constraints and limitations of the end beneficiaries.

We all know how easy it is to measure financial results, and this may be one of the main cause under which financial returns are the business key indicators. Firms engaged in

“social business” are conscious of the benefits returned by taking care of their market wealth eco system (as mentioned by Prahalad). This can be measured through the quality of the relations with the stakeholder’s and how much a good business environment facilitates replicable projects. This can also be measured through the general employee’s satisfaction at work. More and more employee’s are nowadays looking for sense in their work, embed social goals in the daily business of firms is a good mean to have people more engaged in the activity.

As a conclusion, it is important to stress that this kind of strategic choices, reflecting in the daily business is no more superfluous. It is a mean for companies to address both the employee’s expectations on what their firm is aiming at and the necessary involvement in fighting poverty or at least in helping disadvantaged people. Porter and Kramer (2002) talk about the convergence of interests, economic and social and this occurs at the intersection between the company’s value chain and society, and in developing the competitive context. Employee’s interests and active partnership with stakeholders is obviously part of the value chain. Here society and firm converge. Finally, the competitive context, in looking for new ways of dealing with developing markets, is clearly developed.

332. From Corporate Social Responsibility to Corporate Social Innovation

The ways private companies address the needs of economically disadvantaged population require an innovation in the business model. Four rules are essential to launch a new model with basic strategic innovation.

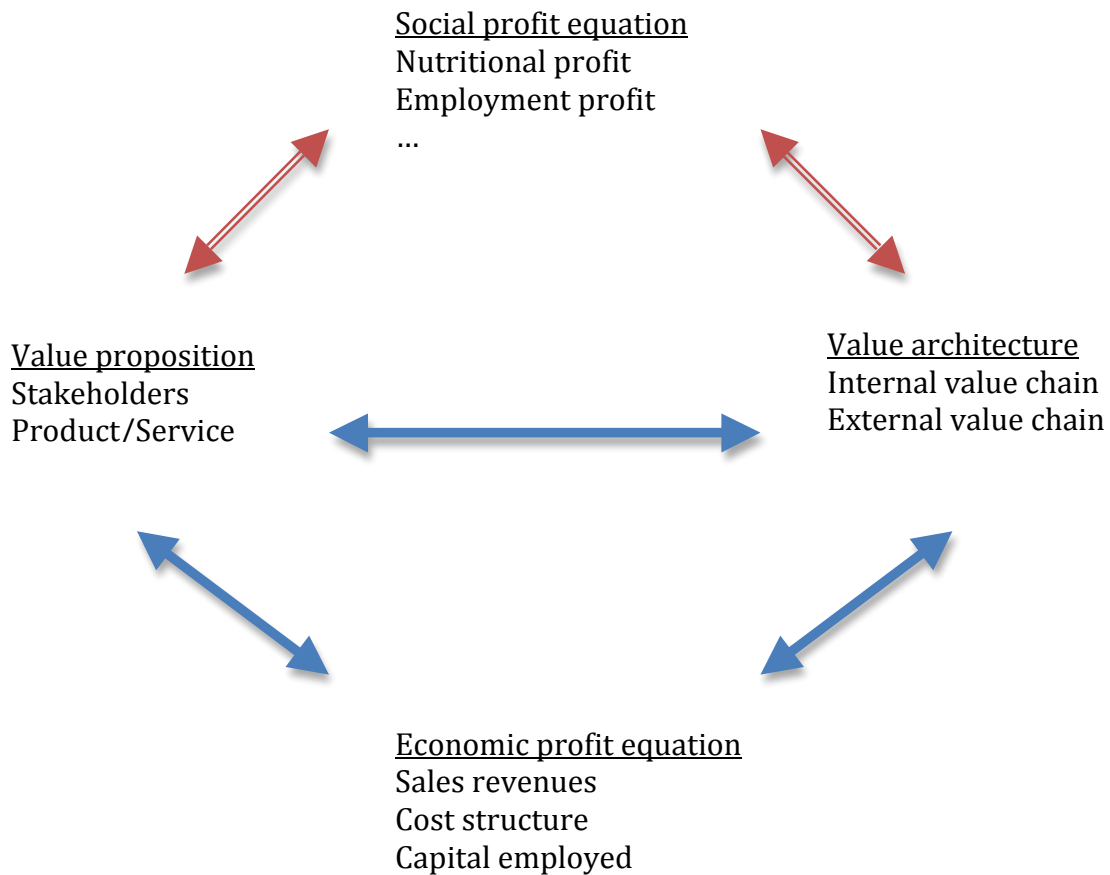
- Challenging conventional wisdom to overpass routine and basic benchmarking. Create the unexpected. Usually, this first rule is applied on a market where it is necessary to create a demand. In our case, the market does not exist and has to be created where there is precisely a demand. It is not really the same marketing approach, if we could still name this, marketing. This challenges obviously the conventional mindset of the company.

- Reinventing the value proposition to develop a customer intimacy, companies have to differentiate the service or product they sell. In our case, it is to fit the needs of the poor population targeted and thus to create trust between company and population. This has been explained in the second chapter.
- Reinventing the value network and find complementary partners that support the value proposition. It is directly linked to the change in mindset. Companies have to think on a broader perspective. In our case, it is clearly the participation or even the co-creation with the people that add a new component in the architecture. Relying on all stakeholders is complementary and essential as they represent in a way the population. The architecture is also how the company works through its different departments. One aspect has been discussed in the previous section.
- Experimenting the new product or service besides the core business and evaluate its relevance to the market. In our case, this is obviously essential as we deal with human beings while addressing the best as possible their needs. It is not just consumption in developed countries. Moreover, doing business in developing countries requires patience and flexibility that is why undertaking a continuous experimentation process is so important and relevant.

In addition, social profit objectives shall be clearly specified.

We can then draw what is a “social” business framework (based on Porter and Lehman-Ortega)

Figure 5 : « Social » business model. Porter, Lehman-Ortega, modified by the author.



The innovation required to operate on such “social” projects can bring return to the company, what Lehman-Ortega (2008) called Corporate Social Innovation (CSI). CSI is then a lab for innovation and is rewarding for the whole company. Employees working on such projects need capabilities to change and address the difficult questions raised. These capabilities are to enforce the human resource within the company and give them more abilities to perform current operations. Human resource is then an intangible asset of more value. The way operations are performed on the “social” business is also in order to raise new point of view among the employees. This could be rewarding to

the company, as new value architecture and proposition shall be found leading to decrease the current costs of the product/service sold. Though, it may be more difficult to assess the return on this social innovation than assessing the social impact. Companies, which have already worked on such projects, are to testify that employees are more valuable than before. Development thus works for business if they bother to take the opportunity.

I would like to conclude this chapter with Mahatma Gandhi's famous quote "We need to be the change we wish to see in the world".

CONCLUSION

The question raised in the introduction springs into focus this move toward a change of paradigm on development issues. This general point has been addressed through the contribution of private sector in water supply to economically disadvantaged people. We reviewed two main contributions, Public Private Partnerships, which are large projects in a complex environment and more discrete interventions at the Base of The Pyramid. These contributions revealed a new approach of poor population, no more rejected people, but part of their country development process. We have not talk about ready-made services waiting to be used or exploited, but of the inclusion of people in the business. As Kgalema Motlanthe, South-African Deputy president says: “It is important to always understand that business is about people. It is about good will, ant that good will depends on integrity”.

The participative approach, following demand-based models, is able to ensure better results on the long term both for people and private actors. But it holds only if companies are ready to switch their habits and process and to take more risks that may be rewarding. Otherwise, companies would face a failure.

This participative approach has stressed two essential components. The first one is the people need, even the willing to take part of the change. This supposes to let them enough room to express themselves and to be contributors of the projects. It is an understatement saying that as long as people are customers, their needs are priorities. Several tools, reviewed in the paper, are used to include people in the market. The second component is that of co-creation. Following this perspective, we went beyond our basic assumptions, and considered the people as entrepreneurs, capable to build and sustain their own wealth eco-system. People are moving from being stakeholders, not enough previously taken into consideration, to “actionholders”.

This last point, at least, requires companies to approach the poverty as a win-win partnership with the economically disadvantaged people. It may be a rewarding commitment to embed these kind of strategic innovations in the current business. Competitive markets in developed countries would help private companies to change

paradigm and looking for new growth opportunities. We think these opportunities make sense only if social profit objectives are taken into account.

We chose not to treat the contribution of small private operators. This is somehow another path to deal with water supply issues. It is a responsibility taken by the population itself toward its own destiny. More and more private operators are currently working in developing countries. We think governments and institutions should support development of such business if they are able to face their responsibilities. This is called subsidiarity and more trust is probably needed for small private operators to scale out their business and thus serve more people. Small private operators, under that scheme, might be a relevant answer to urbanization growth in coming decades.

While water can be served to more people, it is essential to talk about the problem of scarcity and resources management. Agriculture and industries are competing for the resource, which room is then available for people? Demographic growth and economic development are putting pressure on renewable, but still finite water resources. According to the FAO, by 2025, two-thirds of the world population could be under stress conditions (between 500³ and 1000³ per year per capita). The situation will be exacerbated as rapidly growing urban areas place heavy pressure on neighbouring water resources. Moreover, environmental services and ecosystem functions cannot be treated any longer as the residuals of all water users. In the future, climate change is expected to amplify the complex relationship between development and water demand.

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