“INFRASTRUCTURE FOR CITIZENSHIP”: PROMOTING CITIZENSHIP BY THE USE OF WATER AND SANITATION INFRASTRUCTURE

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ABSTRACT

In the last 20 years Peru’s economy registered a cumulative growth of 187.2%. Nevertheless, in order to transform this growth into sustainable development, the country has to tackle challenges such as the reduction of the infrastructure gap, which is estimated in about US$88 billion.

As it is widely known, the deployment of infrastructure contributes to improve the productivity and competitiveness of the country, and also to accelerate the reduction of poverty and to give access to a better quality of life for the most vulnerable population. In this scenario, the Peruvian government worked out different means to stimulate private investment and improve the quality of public expenditures. Specialized literature on the topic point out some suggestions to enhance the roll-out of infrastructure: to boost public-private partnerships (PPPs), to maximize project formulations, to prioritize the types of infrastructure to outlay, among others.

While these initiatives could increase investments in infrastructure, efforts are mainly focused on securing the offer but are not taking into account the demand, for instance, the next users and beneficiaries of these infrastructures. Deploying roads, water and sanitation networks is not exactly synonymous with development. In Peru we have seen cases of basic infrastructure not being used, underappreciated or damaged by the misuse of citizens who are not aware of the benefits it represents for them. These situations could be produced by the lack of education for use, the non-appropriation of the infrastructure and the lack of leadership and institutionalism, turning the infrastructure into big white elephants.

The majority of infrastructure development projects focus only on the tangible aspects but do not involve a social management approach. This is needed to ensure proper deployment taking into account all the stakeholders implied in the process and to accompany users to acquire skills that make them value the infrastructure, use it properly for their benefits, and look after it. Given the level of citizenship that exists in Peru, only accompanying users can improve citizen behavior and, therefore, lay the foundation for sustainable development.

Based on the experience and role of private companies that develop public infrastructure through PPPs, this document presents a proposal to deploy a social management strategy for water and sanitation infrastructure projects, focused on generating citizens who recognize the value and use the infrastructure for their benefits.

The focus on water and sanitation responds to the importance of that sector for Peruvian public policy, which is now working in increasing the networks and improve the management of the provision of the service. The challenge is big: only 6 out of 10 Peruvians access basic services in rural areas and the coverage in the country is 86%.
This model of social management, called "Infrastructure for Citizenship", puts citizens at the center of the process and promotes the appropriation of infrastructure as a means to achieve sustainable development. The stages that the model includes are: social mapping and relationship strategy with leaders, education and citizenship development, local government strengthening and the promotion of the use of infrastructure. As a result, users can become agents of their own development.

**Key words**: infrastructure, development, citizenship, private sector, sustainability

**INVESTMENT IN INFRASTRUCTURE IN PERU**

Peru has led over the past 10 years the economic growth in the region and has managed to grow steadily over the last 20 (cumulative growth of 187.2% and an average growth rate of 6.1% between 2002 and 2013) (World Bank, 2015).

These positive results have been accompanied by improvements in social indicators such as the reduction of the poverty rate. Between 2005 and 2013, poverty was reduced by half, from 55.6% to 22.7% of the population (INEI, 2014). The great challenge that has been addressed and that still remains is how to link this growth with equity, which means being able to support the population that is still vulnerable in a context of growth. The strategies developed by the government to promote inclusive growth include: closing gaps in infrastructure, improve the quality of basic services such as education and health and expand access to markets for the poor and vulnerable segments of the population (World Bank, 2015).

According to the Organization for Economic Cooperation and Development -OECD-, infrastructures are at the heart of economic, social and environmental development, as they represent the integrating factor of sustainable development. Added to this, it is recognized that the effects of infrastructure and its derived services on the economy and society are substantive and affect the quality of life of the population (Rozas and Sánchez, 2004).

The OECD also suggests that there is a double challenge in terms of infrastructure production: i) to deploy additional infrastructure to meet the shortfall of economic and social development, and ii) to ensure that this infrastructure is compatible with the conditions of mitigation and adaptation to climate change.

However, the experience and study of the progress of infrastructure in the country poses a third challenge: how to ensure that the infrastructures are sustainable, that they lead to improvements in the quality of life of citizens and empower them to become agents of their own development. In short, the question is how to incorporate and manage the social component in favor of the beneficiaries and to maximize the impact.

Infrastructure includes a set of engineering structures, equipment and facilities of long service life. These are the basis upon which the provision of services for the productive sectors and households occurs. At the same time, infrastructure can be classified according to its functions as follows: a) economic infrastructure (transport, energy and telecommunications); b) social infrastructure (dams and irrigation canals, water and sewage systems, education and health); c) environmental, recreation and leisure infrastructure; e) infrastructure linked to information and knowledge. It can also be classified according to its geographical coverage as urban, interurban and international (IDB, 2000).
In Peru, the infrastructure gap is estimated at 88 billion dollars\(^1\). For the past six to seven years, the government has doubled the budget for the implementation of public infrastructure, but recognizes that this effort is still not sufficient to close the infrastructure gap. It is in this line that the State promotes private sector participation through various mechanisms such as public-private partnerships, public works for tax deduction, private initiatives, among others.

**WATER AND SANITATION INFRASTRUCTURE**

An important progress in the availability and quality of infrastructure is seen in the country; however, there are still identified gaps at regional level. In the specific case of water and sanitation infrastructure (social infrastructure type), a gap of US$18,000 million is estimated (APOYO, 2012).

The water and sanitation infrastructure is essential to ensure the social development of a country and its economic and competitive growth. If we prioritize the need for investment in infrastructure from the point of view of growth with social inclusion, the prioritization of projects in Peru would be: roads, sanitation, education, health, electricity, irrigation, railways, ports, prisons and airports (APOYO, 2012).

In 2010 the United Nations General Assembly explicitly recognized the human right to water and sanitation, both essential services for the realization of all human rights and a dignified life. Thus, the availability of resources to promote accessibility (infrastructure), affordability (prices) and the provision of water and sanitation services has been encouraged among countries and international organizations.

Years before, in 2010, the United Nations established as part of the Millennium Development Goals (MDGs) - Goal 7: to ensure environmental sustainability, the goal of halving the proportion of people without access to safe drinking water and sewerage by 2015.

Peru has undertaken an ambitious commitment to address this problem - the National Water and Sanitation Plan 2006-2015 sets the goal of reaching 82% of the country with potable water coverage and 77% with sanitation coverage. The situational analysis conducted as part of the Plan identifies the following challenges in the area:

- Insufficient coverage of water services, sanitation and wastewater treatment
- Poor quality of service delivery that puts at risk the health of the population, poor sustainability of systems built
- Rates that do not cover the costs of investment, operation and maintenance of services (tariff arrears)
- Reduced size of the markets, mismanagement of organizations and no financial viability
- Institutional and financial weakness, excess low-skilled human resources with high staff turnover in the entities providing services\(^2\).

In addition to this, for many years the industry has been plagued of inefficient practices, low capacity for governance and budget execution, many political interference and high rate of corruption or perceived corruption.

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\(^1\) Gap calculated for the period 2012 - 2021, which is equivalent to 33 % of GDP projected for this period, according to a study by the University of the Pacific and ESAN.

\(^2\) “National Sanitation Plan 2006 - 2015” Supreme Decree No. 007-2006 - VIVIENDA.

The objectives of the National Sanitation Plan are: 1. Modernize the sanitation sector management. 2. Increase the sustainability of services. 3. Improve the quality of services. 4. Ensure the financial viability of the service providers. 5. Increase access to services.
The National Water and Sanitation Plan proposes a series of objectives related to management, finance and the professionalization of the sector to help meet the target set. It also includes strategies and health education actions that differ according to the target audience. In urban areas they focus on education for optimum and responsible consumption of services, while in small towns and in rural areas it is emphasized in matters of rights and duties towards the water and sanitation services, health, hygiene and environmental education.

The specialized literature in the promotion of development notes that water and sanitation projects that mainly target the physical work and neglect educational aspects for promoting healthy behaviors and generating abilities and skills for the operation and maintenance of the drinking water system (rural areas), achieve a reduced impact. It also emphasizes that any project that seeks sustainable changes should prioritize the promotion of healthy behaviors, community involvement and improvements in the quality of management.

As described in the first chapter, the State's efforts to reduce the Sanitation infrastructure gap nationwide are important and have been promoted with a comprehensive, strategic and long-term look. This way, they not only focus on the physical infrastructure, but also in management, professionalism of the officials in charge and the involvement of the beneficiary population through awareness and education processes.

SOCIAL MANAGEMENT IN WATER AND SANITATION INFRASTRUCTURE - PERUVIAN CONTEXT

Rural and peri-urban populations, target of expansion plans for water and sanitation services, have characteristics resulting from their state of vulnerability, which complicate the context and social fabric of the areas of influence and therefore the ability to achieve sustainable projects and high-impact development.

These social challenges can be summarized as follows:

1. The target areas are spaces that gather a population with low levels of education, high rates of informality and low or no state presence.
2. Often the beneficiary population has had no previous experience in the use of bathrooms.
3. The levels of confidence in the State and organizations providing water services and sanitation are low. This is due to poor access to information, low levels of transparency, minimal or no levels of relationship or communication and low efficiency in management.
4. Low levels of citizenship of the beneficiary population. As a result of the environment in which the population has grown, the few opportunities and minimal solutions, a logic of citizen rights but no duties has taken root among the population.
5. Vulnerable populations, major beneficiaries of the deployment of water and sanitation infrastructure, do not know how to use them and do not recognize them as

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3 The government is also developing various programs such as: the National Rural Sanitation Program, the National Program for Rural Water and Sanitation - PRONASAR, the Program for Improvement and Extension of Water and Sanitation Services in Peru - PROCOES, the Program for Water Supply and Sanitation in the rural Amazon; the National Urban Sanitation Program, among others.

their own. This misuse generates service decay and the goal of development and improvement of quality of life is not met.

6. The social context of the country for years, the lack of institutionalization and limited channels and the failure of formal mechanisms of representation and participation, have led many populations to use forceful measures such as blocking and destroying public infrastructure in an effort to make their demands heard.

This social reality has a negative impact on the sustainability of infrastructure projects and development plans, increasing the risk of:

1. Late payments, refusal to metering and thus the understanding of water as a scarce economic resource
2. Clandestine connections and water wastage
3. Damage to public infrastructure since it is no longer considered as theirs or is used for political purposes.
4. Reduced or no impact on improving citizens’ quality of life and practices of the population.

That is why the water and sanitation infrastructure development model to be deployed must incorporate into their management logic and long-term planning deep work with the population to build close relationships based on trust, jointly responsibility and with citizenship practices.

For its part, the State has incorporated into its policies and projects a line of social management. Thus, all stages in the development of an infrastructure project of sanitation include:

1. Stage 1: Profiling and technical records
Diagnostics to understand the situational context of the population, identify the state of knowledge and health practices, know the level of performance and quality of the organizations in charge of the provision of water and sanitation services and clearly communicate the next steps of the project.

2. Step 2: Running the works
Implementation of capacity development plans and ongoing and clear communication during construction, training in management for the organizations that will operate the services and constant accompaniment to anticipate conflicts.

3. Step 3: Post execution
Training and health education to ensure best practices, timely payment and care for the services.

If as described, the water and sanitation projects promoted by the State involve the social aspect, the results should be of high impact and contribute decisively to improving quality of life and citizen empowerment. However, experience suggests that public administration fails to be efficient and as a result what is established in the plans or manuals is not necessarily implemented.

Hence, in the Peruvian case private enterprise is identified as a relevant actor to work with the state to promote growth with inclusion.
THE ROLE OF THE PRIVATE SECTOR IN THE DEPLOYMENT OF WATER AND SANITATION INFRASTRUCTURE

The participation of the private sector for the development of public infrastructure generates positive effects because it allows transferring efficiency, experience, knowledge and technology. Also, since this sector aims to increase its profitability and sustainable growth, it has the necessary incentives to minimize risks, including the social ones, which may affect projects and therefore their investment. Also, in order to generate greater value, companies that invest in infrastructure projects seek to go beyond the cement and the requirements of the State and also involve good management practices.

The model "Infrastructure for citizenship" proposed in this article was conceived from the experience of the private sector in carrying out water and sanitation projects and proposes additional guidelines for corporate management to consider in the development of infrastructure.

INFRASTRUCTURE FOR CITIZENSHIP

The success of a company combines economic profitability, stability and reputation. This means that in addition to ensuring compliance in an appropriate period of time, efficient use of resources, promotion of technological innovation and deployment of social management plans that comply with the provisions of the State, companies seek to relate properly with all stakeholders, promoting continuous communication that ensures strong relationships and minimizing risks or social conflicts.

In this regard, it appears that the private sector, having its reputation at stake, invests in sustainable projects, so the development of these infrastructures goes hand in hand with the pursuit of sustainability, in other words, promoting the use and ownership of infrastructure by citizens.

The following table summarizes the main social challenges that businesses face in delivering water and sanitation in rural and peri-urban areas.

GRAPH N°1: SOCIAL CHALLENGES IN WATER AND SANITATION WORKS
To address these challenges, a comprehensive model of social management is proposed. Besides the management of the social aspects in the area of intervention and the implementation of training and health education plans, it involves the social fabric to strengthen relations of trust with the local government and population in order to increase the levels of citizenship from the use of the infrastructure.

GRAPH Nº2: MANAGEMENT MODEL FOR THE DEPLOYMENT OF WATER AND SANITATION INFRASTRUCTURE

1. Social mapping and identification of risks, expectations and perceptions
2. Strengthen relationships with local government and capacity building of the State
3. Dialogue, social viability and involvement of the population
4. Empowerment, awareness and health education
5. Evaluation and monitoring

Excellent infrastructure

1. **Social mapping**: A correct diagnosis of the social fabric and the relationships of power and influence of local actors allows developing the right strategies to promote relationships based on trust and ensure social peace during the deployment of infrastructure.

This aspect is very important because, contrary to what should be expected, a negative position on the project could be identified. This could occur, for example, because the population has clandestine service connections for water and sanitation and therefore does not make a payment for the service. Also, depending on the time of execution of the work, for instances if it is during a strong political or social conflict context, public infrastructure could become a focus of discussion or debate.

From the correct understanding of the social context, relationship plans should be developed with each of the actors during and after the execution of the project.
2. **Strengthening relationships with local government and capacity building:** One of the positive results of promoting the participation of the private sector in the development of public infrastructure is to consolidate the rapprochement between the state (at all levels) and this sector. Also, the successful deployment of the project happens to involve the local government, generating communication spaces and building a platform that allows coordinated work between the private and the public sector with a common goal.

On the other hand, based on the interest of developing efficient processes, a private company has to include in its social management strategy the strengthening of technical, social and communication skills of local governments. By doing this, it can achieve long-term relationships with authorities who are informed, have management capacity and become allies to ensure the sustainability of infrastructure.

3. **Dialogue, social viability and involvement of the people:** It is necessary to work closely with the beneficiary population to ensure adequate knowledge and information management. In this way, users are empowered to use the information appropriately and the company encourages the establishment of trust relationships.

In addition, formal and continuous mechanisms of dialogue should be established with the population. These spaces must take into account the characteristics, interests and local perceptions, and should promote the involvement and active participation of the population. At this point, it is necessary to identify the formal and informal leaders with greater influence in the area and work with them to highlight the benefits and importance of valuing the water and sanitation projects.

This stage must be done hand in hand with the local government, relevant actor to ensure the sustainability. The aim is to contribute to a rapprochement between the people and the government. This will help to lower tensions and social conflict, resulting in a stable environment that allows the efficient use of the infrastructure.

4. **Empowerment, awareness and health education:** Once the rapprochement between the local government, the beneficiary population and the company has been achieved, the process of awareness and health education should begin. At this stage, responsible consumption, good hygiene and health practices and the valuation of the infrastructure are promoted. Since the implementation of water and sanitation projects usually last a few months and the change in habits and practices can be achieved after several years of intervention (depending on the levels of education and development of the population), it is necessary to maintain this work continuously during the operational start of the services.

The post infrastructure deployment stage should be led by local leaders themselves, the organization (local government, company or community) responsible for the operation of services and the State.

5. **Monitoring and evaluation:** It is necessary to establish monitoring processes of the use of the infrastructure, the use and consumption of resources and health practices. To do this it is advisable to develop participatory
monitoring processes that involve the government, the population and the company.

Finally, it is important to point out that any initiative that aims to be sustainable and generate positive impacts must be implemented working together with the State and population. Alliances and joint work between these three actors multiply the benefits.

As a result of the implementation of the infrastructure model for citizenship, a State that promotes investment and private participation for development will be achieved, improving its legitimacy and institutionalization in the area and therefore strengthening trust with the population and the private sector.

Regarding the target population, they will have better information and be empowered for the proper use of the infrastructure. They will also have better tools to exercise their citizenship and will be consolidated as agents of their own development from the appreciation and correct use of the infrastructure. Therefore, higher citizenship standards and infrastructures that have greater social impact will be obtained.

The company in turn will provide its efficiency, knowledge and experience to the deployment of high technical quality projects developed on time. Stronger relations between local state and the private sector will also be achieved and the company will improve its image with the population.

CONCLUSIONS

To achieve inclusive growth in the country involves deploying infrastructure, such as water and sanitation projects, ensuring high social impact. This means that, taking into account the local context and characteristics of the population, development plans should be established involving the social management as a main topic.

For this to happen, the participation of the private company becomes relevant since its interest is to achieve profitability and reputation through the deployment of projects that go beyond the contract and ensure their sustainability and benefit to the public. The model suggests the need to work articulated (State - business - users) which will result in obtaining high-impact projects, empowerment of the population and responsible use of the infrastructure, positive valuation of private investment, trust relations between actors and higher industry standards.
REFERENCES


