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SUSTAINABLE DEVELOPMENT OF WATER RESOURCES, WATER SUPPLY AND ENVIRONMENTAL SANITATION

**“Es La Política, Pero No Es La Práctica:”
Translating Reforms in the DR’s Rural Water Sector**

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The Dominican Republic’s Rural Aqueduct Decentralization Project [RADP] follows policy prescriptions informed by NIE. The changes of roles and relationships during the reform process can be understood as attempts to align the incentives of different actors more closely with the goals of the RADP: increased coverage and sustainability of water systems. While the RADP introduced new methods to work with communities and NGO’s, it didn’t address the underlying incentive systems of patronage politics and resource dependency.

Introduction

The Dominican Republic’s Rural Aqueduct Decentralization Project [RADP] followed two parallel policy prescriptions informed by New Institutional Economics [NIE] 1) improved accountability mechanisms between clients and providers and 2) an efficient functional division of labor determined by complementarities of expertise.

RADP policies: community participation and management of water systems; co-production of public services; inter-organizational partnerships and the attempt to establish the state water agency as the regulator of a pluralistic water sector¹, can be seen as attempts to strengthen accountability mechanisms between clients and service providers, as well as to efficiently divide tasks between community and organizational actors. Actual outcomes suggest the provision of water in rural areas of the Dominican Republic is still largely determined by patronage.

How the Dominican Republic’s national institute of potable and purified water and sewers [INAPA] maintained its position within the patronage politics despite an ambitious reform program is best understood examining the transactional nature of the policy process. While the RADP introduced new methods to work with communities and NGO’s, it didn’t address the underlying patronage politics nor resource dependency incentive systems. Instead, reform processes and roles were negotiated to further the parallel interests of INAPA-UEAR, NGO’s, and community members. These negotiations were informed by a common context of resource dependency and patronage.

Accountability and the functional division of labor

As outlined in the 2004 World Development Report, NIE posits that services for poor people improve as accountability mechanisms between clients and service providers

are strengthened and made more direct². If clients, via exit and voice mechanisms, can directly affect the incentives a provider is faced with, then providers will be more responsive to clients. The changes of roles and relationships during the RADP can be understood as attempts to align state, non-profit and community actors’ incentives more closely with RADP goals: increased coverage and sustainability of water systems.

The functional division of labor between NGO’s, INAPA and community groups could not only facilitate the exit option for clients, but also exploit complementarities of capacity, expertise and local knowledge. Under this policy model, NGO’s and communities could benefit from INAPA’s technical expertise, while INAPA could benefit from their superior local knowledge.

Background

Since 1996, INAPA has been reforming and reorganizing its rural water program. In 1996, then-President Fernandez inaugurated the rural aqueduct decentralization project [RADP] and created the rural aqueducts executive unit [UEAR], to provide an organizational base to achieve greater coverage and sustainability. Sustainability would be achieved through community management of water systems and oversight of the quality of NGO installed systems. Increasing national water service coverage was intended to occur via INAPA-UEAR’s new role as coordinator / regulator of the water sector and partnerships with NGO’s³. With funding from USAID, INAPA has been working with the Environmental Health Project [EHP], a private consultancy group, to transition from an ineffectual service provider to a regulatory body that effectively coordinates the work of NGO’s in rural areas⁴. This new role is in line with the current international consensus that the role of the state should be the coordinator of a competitive and efficient water sector⁵. The community

participation component is modeled off of USAID's "total community participation" [TCP] methodology, designed to increase the exercise of the voice accountability mechanisms available to community members. Legally incorporated community water associations [ASOCAR's] would assume responsibility for the operation and maintenance of water systems, allowing those with the most information about local conditions, as well as the greatest incentive to maintain local water systems.

"Es la politica, pero no es la práctica"

The RADP essentially created a new department, the UEAR, which attracts outside funding for INAPA's rural water programs. These new relationships put new pressures on INAPA-UEAR to structure its service delivery activities in manner more in line with the methods condoned by the international development community. These methods include community participation, inter-organizational partnerships based on organizational complementarities, government coordination of NGO activities, needs-based targeting, and integrated water and sanitation public health programs.

However, these are methods, not outcomes. The implementation of these various methods has been significantly affected by patronage incentive systems operating within INAPA. INAPA's role within the context of patronage politics nationally and locally is to provide visible public investments, reinforcing the patron-client linkages that tie INAPA's leadership and employees to patrons and clients in remote rural communities. The RADP did little to affect internal incentive systems permutated by patronage and clientalism.

The result is that complementarities of information and capacity have not been capitalized upon. Program managers at INAPA have little incentive to coordinate NGO activities or collaborate with organizations that don't offer financial resources. Instead of serving as a mechanism to gain local time-place information, community management has become a mechanism to legitimately disinvest from completed projects. This disinvestment allows patronage networks to be expanded or strengthened by inaugurating more projects. While this delegation of responsibility is justified in terms of increasing system sustainability, INAPA doesn't monitor for sustainability. This means that system sustainability has no bearing on the incentives faced by INAPA employees. Project inaugurations, however, are closely monitored political events that reinforce and expand patronage networks, and serve as measures of program success. This double-layered incentive system ensures that individual performance is judged in terms of completed projects, not in terms of sustainability. It is no surprise that the vast majority of INAPA-UEAR's budget is spent on constructing new systems rather than on ensuring their sustainability.

Methods

I gathered this report's primary data in the Dominican Republic in July, 2005. After a series of community visits with

INAPA and NGO staff, I conducted semi-structured interviews with current and former INAPA staff and staff from NGO's and USAID; as well as community water association leaders. Additionally, I attended a conference of community water association leaders. I collected survey results from this conference, grey literature from INAPA's library and files, literature from collaborating NGO's, and policy papers by relevant intergovernmental organizations.

Reform history and rationale

Pre-Reform Organizational Form

Water services in the Dominican Republic have historically been provided by the central government. After a short period of municipal provision of water services, in 1962 INAPA was chartered. Before 1996, the commercial office of promotion had responsibility for rural aqueducts⁶. When international aid organizations worked with INAPA, their offices were semi-autonomous within the INAPA structure. The majority of rural water projects occurred under their auspices, staffed, in part, by INAPA employees.

At INAPA, as in the rest of the Dominican Republic, public goods were a form of political currency. Patronage substituted for local knowledge and/or coherent policy in the selection of communities, outside of externally funded programs. Despite formal criteria for community selection, the final decision to work in a particular community was centralized and often came from the office of the president. This particularization of policy and lack of bureaucratic autonomy was particularly evident in the channels through which community members sought to access services. As INAPA lacked substantial presence in rural areas, and had little direct contact with confrontational grassroots organizations or local NGO's, it received information on community needs from two nation-wide networks. First, the general directorate of community development acted as a door to the state in communities. Second, community members directly solicited local political bosses, who sent requests directly to the president, who would pass the list to INAPA⁷.

The effects of the recently strengthened civil service law have yet to be felt in INAPA. The majority of civil servants are replaced with the change of government. While there were reports of greater job security under Balaguer, after his succession, appointment and advancement became increasingly political⁸. Only the very best of the street-level functionaries are re-hired after regime changes (three out of the social promotion staff of 17, most recently). The department heads are nearly always replaced, regardless of skill; this leaves very little incentive to improve job performance, as performance promises only tenuous job security.

INAPA is mandated responsibility for all water for human use in the Dominican Republic; however, this doesn't describe the institutional reality. Limited resources and capacity constrained INAPA's ability to provide water to the majority of rural communities or to maintain those already provided. NGO's and other state agencies filled this void. Of

the 2,500 rural water systems estimated to be in the country, 1,500 were built by NGO's and other agencies⁹. Mistrust, lack of information sharing, and indifference characterized NGO-INAPA relations¹⁰.

Water system sustainability was hindered by INAPA's limited resources and incentive. Systems installed under the national rural aqueduct plan of the 1970's fell into disrepair as local participation dwindled to collecting user fees to pay INAPA¹¹. As Esman cautions, installing infrastructure is more politically attractive than maintenance¹². When heading a government bureaucracy can lead to political office, the attraction can be even stronger. The former head of INAPA, Roberto Rodriguez, was elected senator of his province, the Seibo, after installing many aqueducts in the region¹³. The current head of INAPA publicly charges that many of these systems were installed with insufficient planning and water sources¹⁴. Obviously, the pressing concern was the construction of new systems, not their durability.

Purposes for reform

The UEAR and the RADP were initiated by executive decree during the first term of President Leonel Fernandez¹⁵. The goals of the RADP were to: create an organizational base with specialized staff for small rural water projects; and to promote greater sustainability and coverage through community management of water systems and re-defining INAPA's role as the sector coordinator¹⁶.

INAPA-UEAR's new organizational role was tailored to existing sector and organizational conditions: limited resources and participation in the sector by "a multitude of other agencies and organizations"¹⁷. By establishing inter-organizational relationships, INAPA-UEAR would facilitate, coordinate and regulate the quality of investment in rural areas by NGO's while coordinating complementarities of organizational strengths¹⁸; in which NGO's were cast as especially capable interfacing with rural communities¹⁹. However, given the de-facto plurality of the sector before the RADP, it can also be seen as an ex-post attempt to officiate an already pluralistic sector.

Similarly, community management of water systems via a legally incorporated water association (an ASOCAR) represents a delegation of responsibility for the operation and maintenance of water systems, due to INAPA-UEAR's lack of capacity to fulfill its legal responsibility to maintain and operate all of the rural water systems constructed in the country, rather than representing an attempt to increase community influence over local water systems, or over INAPA-UEAR²⁰. The RADP came not so much from desire to integrate more effective forms of community and NGO voice and exit, as it was an attempt to fulfill INAPA-UEAR's legal responsibility and mandate through the delegation and regulation of activities outside of its capacity, but within its remit.

International consensus, resource dependency and role definition

By assuming the role of sector coordinator, INAPA-UEAR

cast itself as a legitimate state actor in the discourse of the major donor agencies. The dominant development discourse shared by the major donors to the Dominican Republic: US-AID, Co-operación Española, IADB, and GTZ, echoes the transition from rolling back an incapable state to strengthening that same incapable state to better coordinate development activities of the now pluralistic sector. The IADB has offered US\$ 70.4 million for the reform of the water sector in the Dominican Republic contingent upon the passage of an accompanying legislation, aimed at increasing the efficiency of water providers through competition. Rural parts of the sector are slated to receive less than 10 percent of this aid package. INAPA-UEAR would no longer be the owner / agent of rural water systems but rather "RWSS sector planner, regulator, monitor and possible funder"²¹.

In order to secure funding in the current context, where state and aid funding are decreasing to state agencies that provide services directly, INAPA has recast itself as a regulator and facilitator of the water sector. INAPA-UEAR has successfully been able to maintain, if not increase, its legitimacy within the donor community by delegating its previous activities and responsibilities to NGO's and community members.

Implementation and negotiation

The delegation and regulation of water sector activities hasn't lead to significant changes in the influence that INAPA-UEAR, community groups, and NGO's have over each other. Therefore, NIE analysis would not predict any significant change in service provision, as INAPA-UEAR faces no new pressure from communities or competing organizations to perform better. Nor has INAPA-UEAR been able to establish itself as a sector regulator because the RADP has not significantly changed the incentive and accountability systems that govern the interfaces between INAPA-UEAR and communities or between INAPA-UEAR and NGO's.

Negotiations at the interface

The definition of the functional divisions of labor between INAPA, NGO's and ASOCAR's is largely determined by the negotiations of the meaning and legitimacy of the roles of the various development actors. Changes achieved by the reform, thus depend upon how the reform is translated and negotiated at the various development interfaces. The translation and negotiation of reform processes at the interface between INAPA and its donor agencies, national NGO's and communities are evaluated in the following section.

Coordinating and collaborating with NGOs

Lack of organizational capacity constrains INAPA-UEAR's ability to coordinate NGO activities, out-compete NGO's for state or aid funds, or to establish and maintain long-term organizational co-operation despite apparent complementarities of organizational strengths. INAPA-UEAR has a limited presence in rural areas; many local, national, and international NGO's remain unaware that INAPA even builds small rural

water systems²². INAPA-UEAR lacks both the presence and legitimacy necessary to effectively act as a regulator. It also lacks the political influence to enforce regulation, as political officials run many NGO's²³, and proposed sanctions need congressional approval²⁴.

INAPA-UEAR is only beginning to actively inform itself of NGO's involved in rural water provision. INAPA-UEAR has thus far established relationships with a handful of NGO's, but these relationships tend to change with political regimes²⁵.

Relationships between INAPA-UEAR and NGO's are a matter of will on the part of both organizations²⁶. Those NGO's and inter-governmental organizations seeking to strengthen state capacity are beginning to actively seek out relationships with INAPA-UEAR²⁷. The Spanish Aid agency requires Spanish NGO's to alert INAPA-UEAR of their activities and to submit their designs to INAPA for approval²⁸. Only one national NGO, MUDE, regularly checks its water system plans with INAPA.

Despite INAPA's technical resources available to collaborating NGO's²⁹, there are few incentives to accept INAPA as a coordinator. For NGO's, to collaborate with INAPA is to voluntarily submit to regulation. Few NGO's see the necessity of, or have the resources to, comply with the INAPA's strict design standards³⁰. At a recent conference with NGO's working in the water sector, these standards were lowered, but not to a level that most NGO's consider appropriate or affordable in remote areas³¹. Additionally many NGO's feel uncomfortable with what they see as the politics and/or patronage-related aspects of INAPA-UEAR's work.

Indeed, the political nature of INAPA-UEAR's work can be seen as a disincentive for the agency to regulate the activities of NGO's. In addition to the obvious political risks of confronting the "pet" NGOs of legislators, regulation activities occupy skilled INAPA-UEAR staff³³, while INAPA-UEAR gets little recognition for this work locally -- compared to INAPA's aqueducts which are publicly inaugurated, painted blue and bear INAPA's seal. Nor can INAPA choose the communities to benefit from this regulatory investment as easily. Even when working with NGO's that match funds, or completely fund collaborative projects, INAPA-UEAR negotiates to implement projects in politically strategic communities or provinces³⁴. Relationships with external aid agencies, a resource acquisition strategy of INAPA, have the most influence over the ways that INAPA-UEAR works with communities, from introducing the TCP model on the part of USAID to imposing a policy of needs-based standards for community selection on the part of Cooperación Española. However, INAPA-UEAR could hardly be seen as the coordinator of these relationships, as the power sits with the donor organization -- "He who pays the piper calls the tune"³⁵.

The durability and nature of INAPA-UEAR's inter-organizational relationships depend upon the financial resources that the organizational partner brings to the relationship. INAPA has little incentive to coordinate or regulate the activities of

non-funding organizations while it lacks the necessary leverage to coordinate the activities of donor organizations.

Coordination of autonomous and oppositional NGOs

The historical and cultural context of NGO activity in the Dominican Republic has shaped current collaboration between NGO's and INAPA-UEAR, not organizational complementarities, belying the non-efficiency considerations in the functional division of labor between NGO's and INAPA-UEAR. Rather, these collaborations are most affected by issues of legitimacy, autonomy and resource dependency.

As NGO's absorb increasing amounts of aid and government funds³⁶, government agencies have come to regard NGO's as sources of income³⁷. Currently, national NGO's registered with the government are viewed largely as income earning mechanisms for politically connected individuals³⁸. Although in recent years, international donors, such as USAID, have begun to funnel more aid to government agencies³⁹, relationships between INAPA-UEAR and NGO's remain largely dependent upon the resources the NGO's are able to bring to the partnership.

Although this is reflected in the increasing amount of money in INAPA-UEAR's budget that comes from NGO partnerships, the political and cultural histories of both service provision and Dominican NGO's have complicated NGO -- INAPA-UEAR relationships, as historical roles are re-negotiated under a new political economic context.

Under Balaguer, civil society organizations were oppositional and sometimes necessarily clandestine groups. National civil society groups and NGO's find their current interface with government agencies colored by past experience, where⁴⁰ working independently of government influence has a long precedence, and may inform decisions to not collaborate with government actors. Additionally, working with what is regarded as an ineffectual and corrupt state may threaten the legitimacy of NGO's, long defined as local allies against the state. NGO's ability to reject state coordination illustrates state weakness.

Community management

INAPA did not intend community management of water systems to entail any change in the influence community groups had over INAPA, the goals of community management were: increased sustainability and establishing a financially viable system for system maintenance. In fact, the creation of the UEAR may have actually limited an important channel for voice. Before the RADP, community members would go to the municipal government offices to petition for water services, and they could threaten to vote against the incumbent municipal government; now they direct their petitions to INAPA-UEAR's office in the capital, where their threatened political exit option has less political force.

TCP, as implemented by INAPA, affords community members minimal leverage to influence INAPA-UEAR's behavior. INAPA-UEAR has several non-negotiable terms

under which it will provide a water system⁴¹. INAPA-UEAR is able to present its terms as non-negotiable because its threatened exit has worse consequences for community members than for itself. Community input, beyond the location and condition of community water sources is not solicited nor respected by INAPA-UEAR'S engineers⁴². If the engineers determine that several delivery options are viable, INAPA-UEAR social promoters convene a community assembly to discuss the different options in light of maintenance costs⁴³. Once the system has been installed, it is handed over to the community water association for operation and maintenance⁴⁴. However, the presidents and officers of these associations feel responsible to INAPA⁴⁵, and associations are re-organized at INAPA'S bidding⁴⁶. Community management of water systems represents a delegation of responsibility, not an increase in the influence local people have over INAPA-UEAR'S projects.

Negotiated meanings and roles involved in community participation

Roles in the division of labor between community members and INAPA-UEAR are negotiated between community members, NGO'S and INAPA-UEAR.

While community members are willing to contribute their time, labor and resources to NGO programs, many feel entitled to the services they see as the responsibility of the state⁴⁷, or less commonly, see their vote as payment for a project⁴⁸. What community members are willing to contribute as "community participation" changes with the nature of the service provider. When working with INAPA, community organizations are set up to receive INAPA'S systems.

Power relationships between communities and INAPA-UEAR play a significant part determining the roles of community water associations. INAPA-UEAR dictates community contributions as conditions to collaborations between INAPA-UEAR and communities. Community association responsibilities have little to do with the type of involvement community members prefer. They generally prefer to participate in meetings and educational activities⁴⁹, instead community associations take responsibility for system operation and maintenance. Delegating these responsibilities to community members allows INAPA-UEAR to engage its resources constructing more water systems, without being charged with neglecting the maintenance of completed systems.

Involvement in community water associations is mediated by community roles and links to patronage networks beyond the community. Pre-existing community roles play a large part in the process of picking community leaders to head community water associations, as the leaders are commonly members and leaders of other community associations⁵⁰. It is also common for the association president to donate land for the pump and cistern, and to operate the system⁵¹. While this arrangement gives the president a huge amount of influence over the system operation and finances, the arrangement is commonly described in terms of personal role and respon-

sibility in the community⁵². In both views, the individual is reinforcing his/her role as a local patron, by establishing political and de-facto control over a local resource.

Linkages with the local and national political machinery also inform the make-up of community water associations. Association leaders often count as part of their power-base their links to local political bosses⁵³. This can lead to difficulties when local political bosses, who provided the initial contact with INAPA-UEAR, use the water outside of INAPA-UEAR'S regulations, often to water cattle or irrigate⁵⁴. However, political linkages are considered important enough that it is common practice for water associations to hold elections after a change of party nationally so that new members are in the same party as the new INAPA-UEAR staff, in order to ensure that relations between the community and INAPA-UEAR run smoothly⁵⁵. When community management processes are translated into the institutional context of community members, they often reinforce existing power relationships. The negotiation of the community management roles is informed by the same institutional context that informs existing power relationships within communities.

The ASOCAR: an institutional mechanism for sustainability?

In order to increase the sustainability of installed systems without further over-taxing its organizational capacity, INAPA-UEAR aimed to create legally incorporated entities, the ASOCARs, to assume responsibility for the operation and maintenance of water systems. The ASOCAR'S legal status allows elected members to apply for loans and establish bank accounts for the water system. Additionally, the ASOCAR is a formal vehicle to access INAPA'S technical resources, independent of particularistic political patronage links. NGO'S aware of the legal status of ASOCARs see this as a guarantee of the sustainability of their investments⁵⁶. While INAPA-UEAR maintains legal ownership of the equipment, and assumes responsibility for repairs outside of the expertise of local plumbers, the ASOCAR is expected to fund nearly all repairs and maintenance as well as to hire operators and plumbers.

ASOCARs have been able to respond to even severe disasters more quickly than INAPA-UEAR⁵⁷. However, this capacity is entirely dependent upon the ability to collect sufficient user fees, the skill with which ASOCARs struggle most⁵⁸.

The transaction costs involved in incorporation have significantly limited the number of ASOCARs⁵⁹. To date, five ASOCARs have been incorporated. Nearly all planned incorporations depend on funding from Co-operacion Española⁶⁰. INAPA-UEAR has yet to begin to "decentralize" water systems built before the RADP, and considers the current batch of 23 ASOCARs a backlog from the previous regime⁶¹. In 2005, INAPA-UEAR hoped to incorporate 60 ASOCARs and to double the number for 2006⁶². While ASOCARs can facilitate community management and out-

side agency investment in the water sector, the transaction costs of incorporation have thus far limited their number to an insignificant percentage of community water system management options.

Reform outcomes

The goals of RADP were to expand coverage and sustainability of water systems in rural areas while keeping within INAPA's limited resources. In the eight years following the RADP, more rural people annually receive new water systems from INAPA than in the four years before the reform. Through increasing the number of collaborative projects, INAPA-UEAR has been able to augment its budget significantly and is increasingly involved in providing integrated water and sanitation programs. However, the water quality of rural water systems is unmonitored. The sustainability of community-managed systems is unknown. The pressures of patronage and the accompanying focus on initial delivery have significantly undercut improved targeting and sustainability of water projects.

Efficacy

Despite its status as a dependent of the secretary of health, INAPA doesn't provide integrated water and sanitation services. INAPA builds potable water delivery systems and the occasional sewage treatment plant. Accordingly, water projects have led to limited results in terms of health and human development⁶³. Water systems installed collaboratively with other organizations may be integrated into larger public health packages at the insistence of collaborating agencies⁶⁴. However, this work is seen as tangential to the specific role of INAPA-UEAR, and largely goes unrecorded in institutional memory.

Monitoring, incentives and sustainability

Patronage politics deeply affect the institutional memory at INAPA. First, documentation from previous regimes is rarely referred to by current INAPA-UEAR staff. Second, because the onus is on system inauguration, rather than durability or public health outcomes, INAPA-UEAR does not monitor for the sustainability or performance of its systems directly or indirectly. INAPA's laboratory is open to ASOCAR members who wish to check the quality of water in their system, however this is dependent upon their initiative and they are expected to bear all of the costs of transporting test specimens⁶⁵.

INAPA-UEAR has no way of knowing if it is achieving its goal of sustainability. ASOCAR members alert supervisors of problems when there is a problem they don't have the technical expertise or funds to repair⁶⁶. Of limited surveys taken of completed systems, about sixty percent of the systems were still functioning. Of the nine water systems installed in Hato Mayor during the pilot project, only four were working four years later⁶⁷. Out of twenty-eight systems of various ages surveyed in mid July of 2005, nineteen water systems were functioning⁶⁸. There is no data from before the RADP

regarding system durability. The most common response by INAPA employees regarding system sustainability is: "These systems are designed to last twenty years"⁶⁹. This is reflected in monitoring systems and records concerned mainly with the inauguration of new systems.

Increases in coverage

According to the annual inauguration records, there has been a trend over the past eight years of increasing numbers of beneficiaries served by INAPA. However, it is far from clear if this increase is due to, or greatly affected by the RADP. In the four years directly before the RADP an average of 28,751 people per year received a new rural water system, compared with 29,794 per year directly following the RADP and then 108,100 per year in the last four years⁷⁰. However, annual numbers vary by as much as tenfold from year to year. Also, this is an aggregate number, there is no record that disaggregates systems installed by INAPA-UEAR via TCP / collaborative methodologies. Other factors that may have affected this trend include, but are not limited to: changes in government, hurricane restoration in 1998 and 1999, and completing a four-year project with JICA in 1997.

Targeting of services

A rough analysis of the degree to which targeting was based on need can be developed by comparing census figures for water services in households with the provinces most often served by INAPA-UEAR. With no evidence of needs-based targeting at the provincial level in the four years before the RADP, there hasn't been an appreciable difference over the eight years of RADP⁷¹. The total number of water projects in the five provinces where the most people are in need of water went from 18 in the four years before the RADP to 26 in the past four years⁷². However, this is compared to 11 projects in the last four years the province of El Seibo. El Seibo has under two percent of those without water services within INAPA's remit⁷³. El Seibo, was however, the home province of the former director of INAPA, who is currently senator for El Seibo.

Budgeting changes

INAPA has achieved an astounding increase in the number of people served per year considering its shrinking budget⁷⁴. This increase in cost effectiveness can be partly attributed to the increase in collaborative projects between INAPA-UEAR and other organizations. In the last four years, INAPA-UEAR has consistently installed around half of all of the rural water systems installed by INAPA⁷⁵. In 2002, INAPA-UEAR covered just under 40 percent of its program costs with outside funding⁷⁶. This percentage has consistently grown throughout the reform process⁷⁷. As for other measures of cost effectiveness, the salaries of the entire social labor department, the department charged with ensuring system sustainability through community managed systems, totals RD\$219,256.48 monthly⁷⁸, representing less than five percent of INAPA-UEAR's monthly budget of five million pesos⁷⁹.

However, supervisors working in the social labor department are limited from visiting the communities they are responsible for by high cost of fuel and the scarcity of vehicles.

The RADP has proven most successful at attracting outside funding to INAPA, allowing INAPA to inaugurate more systems and to provide more people annually with potable water. Changes in targeting practices or towards integrated public health goals have been byproducts of collaborative projects with funding agencies. These outcomes are in line with both organizational and individual interests as they interact with incentive systems permutated by patronage and clientalism.

Looking forward

While INAPA-UEAR may have little interest in investing money, or more importantly, human resources in the sustainability of the rural water systems it installs through systematic follow-up activities with water associations, there are reasons to hope that community water systems in the Dominican Republic may begin to last longer than before. The Dominican Network of Rural Aqueducts [REDAR], made up of several community water associations was officially incorporated this past summer. Their goals are to provide education, technical assistance, and some sort of insurance fund to member communities. There are hopes that, with their incorporated status, REDAR may be able to access aid and government funding.

Notes

- 1 World Bank 2003, Wright: 1997, DFID/WELL: 1998
- 2 World Bank 2003
- 3 Sub-Direccion Ejecutiva INAPA: 2001; Johnson & Pérez: 2002
- 4 Direccion Ejecutiva INAPA: 1997, Johnson & Pérez: 2002
- 5 World Bank 2003, Wright: 1997, DFID/WELL: 1998
- 6 Ureña, García Ramírez
- 7 *ibid*, *ibid*.
- 8 Johnson & Pérez: 2002, Ureña, García Ramírez, Pérez, Dominguez, de la Cal
- 9 Johnson & Pérez 2002
- 10 *ibid*, Ureña
- 11 Barrientos, García Ramírez, Johnson & Pérez 2002
- 12 Esman: 1991
- 13 García Ramírez
- 14 Marte: 2004
- 15 Dominguez, Johnson & Pérez: 2002, Ureña
- 16 Sub-Direccion Ejecutiva INAPA: 2001
- 17 Johnson & Pérez: 2002, ix
- 18 INAPA-UEAR: 1999
- 19 *ibid*
- 20 Fundamentos INAPA-UEAR
- 21 WHO/UNICEF: 2000, Johnson & Pérez: 2002
- 22 Gonzalez Rodriguez, Alonso
- 23 "Don Goyito...": 2005
- 24 Paniagua
- 25 INAPA-UEAR: 1999-2004
- 26 Ureña

- 27 Ureña, de la Cal, Nin
- 28 Paniagua, de la Cal
- 29 Pérez Benitez
- 30 Ureña, de la Cal, Nin, Capellan, Hill, Johnson & Pérez: 2002
- 31 Ureña, Nin, Capellan, Johnson & Pérez: 2002, Hill, Dominguez
- 32 Capellan, CRS, Nin
- 33 Paniagua
- 34 Dominguez
- 35 Lewis: 2001
- 36 Ornés Heded, Pérez,K.
- 37 Dominguez
- 38 "Don Goyito...": 2005
- 39 Johnson & Pérez;2002
- 40 Nin
- 41 Direccion Ejecutiva, INAPA-UEAR: 2001
- 42 Dominguez, Pérez, A.
- 43 Ureña, de la Cal, Dominguez
- 44 Direccion Ejecutiva, INAPA-UEAR: 2001
- 45 Americo del Rosario, Martez, Mauricio, Reyes, Sandovál, Zorrilla.
- 46 *ibid*
- 47 Johnson & Pérez: 2002, Capellan.
- 48 Dominguez
- 49 García Ramírez
- 50 Dominguez, Ureña.
- 51 Ureña
- 52 Americo del Rosario, Martez, Mauricio, Reyes, Sandovál, Zorrilla.
- 53 Community Visit July 15 2005 Hato Mayor.
- 54 11 July 2005 community Visit Casiquillo
- 55 Ureña.
- 56 Hill, Capellan, Nin
- 57 Dominguez, García Ramírez
- 58 REDAR: 2005
- 59 Dominguez
- 60 Dominguez, Paniagua
- 61 Paniagua
- 62 Paniagua
- 63 WHO/UNICEF: 2000
- 64 de la Cal, Paniagua, Nin
- 65 Pérez Benitez
- 66 Paniagua, Dominguez
- 67 Ureña
- 68 REDAR: 2005
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