The wicked problem of waste: Systems practice in Azuero

by Larissa Demel, Head of Experimentation, UNDP Panama Accelerator Labs.

Systems practice is messy.

It's particularly messy when one is used to a traditional way of approaching international development: Plan, Implement, Evaluate. *Attempting to understand the wicked problem of waste, Panama's UNDP Accelerator Lab shares its insights into utilizing systems thinking to move from a single-point solution to a systemic and integral solution, and transforming the traditional approach to* Probe, Sense, Respond.

An "abundance of fish, butterflies, and trees": if you've ever wondered where Panama gets its name, look no further than the Azuero Peninsula. Often described as a tropical and cultural paradise, the peninsula is speckled with mangroves, crystal forests, wildlife reserves and a rich fauna that includes over 200 bird species.

Azuero is home to a rich biodiversity, the protection of which requires a human shift towards sustainable thinking.

But, upon closer examination, it is as if Azuero exemplifies the words of Nobel laureate and writer Jose Saramago – "Not everything is at it seems, and not everything that seems is." Saramago continues by explaining a slippery slope and the possibilities of sliding down it. With looming health issues, river pollution and dangerous flooding, Azuero is indeed sliding. The soapy suds causing the slipperiness? Waste.

Waste is becoming an increasingly wicked problem in Azuero and the rest of Panama.

There are countless challenges threatening the solid waste management (SWM) system in Azuero's municipalities, for instance: open landfills are strewn across the peninsula's green spaces, many of them harboring the unimaginable: animal carcasses, television sets, refrigerators, textiles and more; many municipalities have no solid waste infrastructure: more than half of households in the Azuero province of Los Santos incinerate their waste; communities are increasingly frustrated with a lack of ownership from municipal actors to solve non-existent landfills; the list goes on. Communities have resorted to taking matters into their own hands, for example: the 100 or so households of Candelaria, a small community neighboring Pedasi, have declared Thursdays from 1:00 to 3:00 pm the official timeslot to burn waste in their backyards. On those days, people with asthma are advised to stay indoors.

Waste incinerations in Azuero occur both in landfills as well as in backyards, causing toxic fumes that are linked to respiratory diseases.

The arrival of the new coronavirus (COVID-19) has exacerbated the waste problem. Look no further than the nearest street corner or park bench to find a used surgical mask, the use of which is mandatory anywhere outside one's home, or an empty food container, brought upon by delivery-only policies restaurants put in place in response to varying lockdowns and curfews. The intensification of single-use products has increased production and consumption, and on a global level we're able to see a higher quantity of waste in those countries with stay-at-home measures. The threat of contagion through incorrectly disposed facemasks has prompted the launch of UNDP's "Indifference kills" campaign advocating to end the facemask littering. Even though Panama's Ministry of Health has put in place protocols and guidelines aimed at health care facilities and other waste generators on how to properly and safely handle and treat waste generated during the COVID-19 pandemic, red trash bags – commonly known to contain infectious biological waste, often including syringes and other hazardous material – can be seen in Azuero's landfills.

When incorrectly disposed, used facemasks end up in the streets, rivers and oceans. This directly and negatively affects terrestrial and marine ecosystems.

Waste management is indeed what the Accelerator Labs would call a "wicked problem." Wicked problems are complex and unruly problems that beset modern society, where running interventions can often feel like playing a game of whack-a-mole. They are those problems that cannot be removed from their environment, solved, and returned without affecting it. The issue of waste is tightly interconnected with global, national, and subnational production and consumption patterns and is continuously shaped by sociocultural dynamics in diverse contexts. As a result, the way waste management looks and can be tackled varies widely from community to community. Put briefly: Waste management fulfills the criteria to classify as wicked.

This, of course, isn't the first attempt to tackle the wicked problem of waste in Panama. Countless attempts have been made by NGOs who lead recycling initiatives and environmental training in schools, local communities doing beach cleanups, and government institutions by way of legislation and sanctions for littering. Not to mention the unsung heroes: businesses and households who dutifully drive their recyclables to a collection center 40 minutes away, and informal waste workers creating economic opportunity out of trash.

Alas, wicked problems demand the collective response typical of systems, not individuals. They are complex issues that change in real time. Panama's first UNDP Accelerator Lab – one of 92 labs serving 116 countries building the world's largest learning network to tackle 21st century development challenges – are unpacking sustainable development challenges through the practice of systems thinking. Systems thinking brings together a wide range of voices and perspectives, including those of grassroots actors, in

order to move from single point solutions to a portfolio approach. By using system mapping to understand wicked problem systems in their entirety, it's possible to find new ways of tackling these problems.

In order to gain a 360-degree understanding of the local waste-management system, the lab has taken to the field to gather information with policymakers in three municipalities, participate in UNDP-led workshops with Azuero's female community leaders, and interview solid waste management experts and local actors, including a community church and fishermen association. Supported by the municipalities of Pedasí, Tonosí and Pocrí, as well as the national Ministry of Environment, the lab visited landfills, received insights into institutional environmental norms, and gauged community and public sector interests.

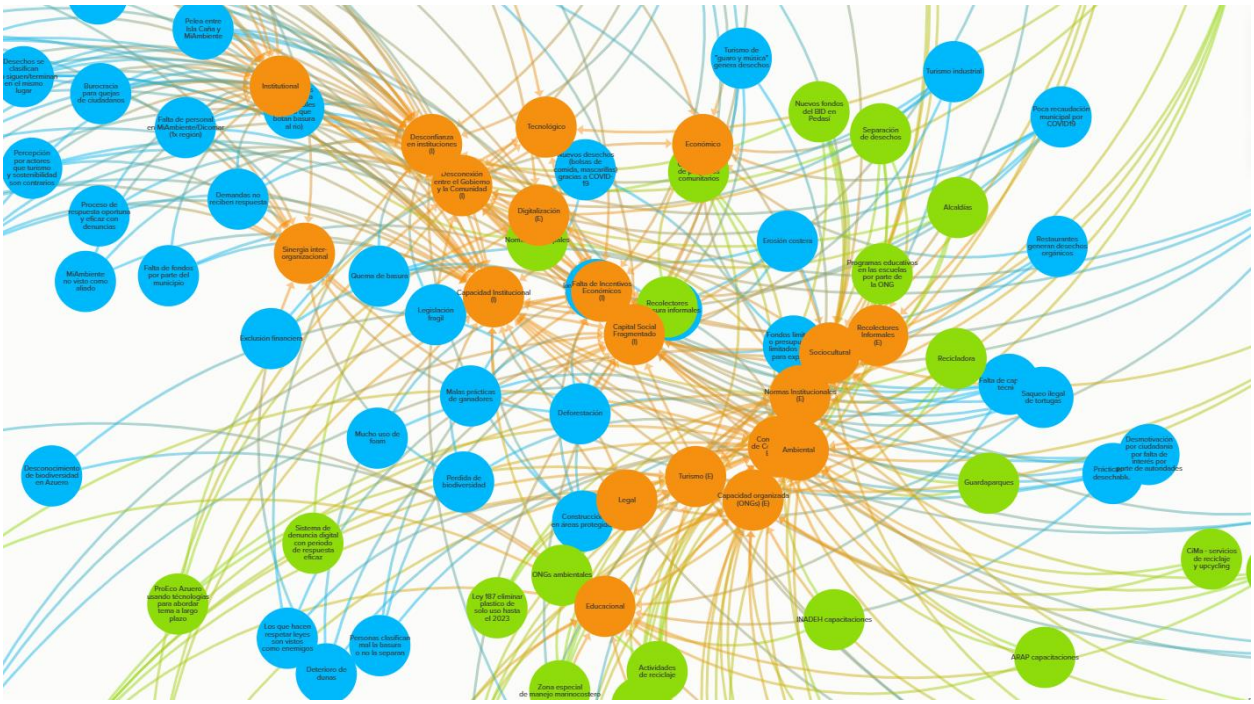
Fifty days into the systems journey, one learning stands out more than others.

The members of the Accelerator Lab interview community members of La Candelaria

Systems thinking is messy.

It is so messy that parts of the process can be painstaking to anyone who is used to the world of logical frameworks. There is no "Mission Accomplished" badge to be earned. After settling on a preliminary "north star" for the system we envisioned, the lab's first session focused on mapping key forces that inhibit or enable the wicked problem of waste.

Brainstorming is the easy part.



A first attempt at finding nodes and patterns showed a concentration of inhibiting forces on the institutional side

Clustering these forces by themes, however, took a little longer. Is the fact that trash-producers aren't being prosecuted by the municipalities a legal or an institutional inhibitor of a healthy system? Recognizing patterns within this exercise is a key skill in attempting to cluster forces into themes. To complicate matters more, crystallizing themes out of a system is a highly fluid process. Meaning that, at times, systems practice is unstable and leads to more questions than answers.

And this is okay.

It is okay because, in all honesty, systems do not get solved. They are a true representation of reality and yes, they are messy. Which means that the lab will probably spend at least 100 hours iterating and attempting to understand by way of writing post-its, moving post-its, interviewing, reading, facilitating conversations, throwing post-its in the trash (and fishing them out again) – all of this within the next few weeks. This rinse-and-repeat process will allow us to examine the system in its truest form and develop a multitude of experiments based on solutions emerging from both the community and allies. Here is where the die-hard log framers among us must understand that engaging with complex problems, and making sense of them, is an iterative process that is ever-changing. Iterations are what help us see the patterns

rather than just the problems. And by understanding the patterns of a system, we come closer to attempting to reveal points in it that can leverage modest actions towards significant impact.

To keep Panama's natural abundance of fish, butterflies and trees that gave the country its name, we must expand the range of choices available for solving the wicked problem of waste. Systems thinking does this by broadening our thinking and helping us articulate problems in new and different ways.

This blog is the first of a series of monthly publications from Panama's UNDP Accelerator Lab, an incubator for the future that aims to reimagine development and is part of the world's largest and fastest learning network on sustainable development challenges.

This systems practice is part of the UNDP and Ministry of Environment project Sustainable Azuero, funded by the Global Environmental Fund, which aims to restore biodiversity loss and ecosystems degradation in the marine-coastal areas of the south of the Azuero peninsula.

Follow our social media channels for updates on the Accelerator Lab. If you want to learn more about how to conduct systems mapping please contact the Accelerator Lab at laboratorioaceleracion.pa@undp.org

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