GLOBAL INFORMATION SOCIETY WATCH **2020**

Technology, the environment and a sustainable world: Responses from the global South

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Introduction

In recent years, forest monitoring programmes have become widespread in Amazon basin countries. International environmental organisations (IEOs) have introduced GPS, smartphones, drones and other technologies as useful tools to monitor forest cover and to stop deforestation – with the overarching goal of climate change mitigation. These programmes have become a common feature of IEO partnerships with Indigenous organisations, responding to calls to include them – and their knowledge – in climate governance.

This report analyses forest/territorial monitoring, surveillance and early warning programmes created by (or in collaboration with) the Coordinator of Indigenous Organisations of the Amazon basin (COICA) and its member organisations in Ecuador (CONFENIAE) and Peru (AIDESEP). It incorporates findings from interviews and participant observation with the leaders and technical teams of the three organisations. The report highlights the potential of technologies to aid organisations in planning, zoning and defending their territories while centring a definition of sustainable development as achieving a "Vida Plena" (Full Life). As explained by a COICA leader,[2] "Vida Plena" is "the possibility for Indigenous peoples to freely develop their cultures, that their territories are not (negatively) impacted, that their rights are respected. That they can live freely and collectively in their territory, developing their own knowledge systems."

Forest monitoring programmes and organisations involved

Among the various forest monitoring programmes in the Amazon basin, this report focuses on three, because they are regional (i.e. Amazon-wide) initiatives. First is the "Early Warning System" (SAT in its Spanish acronym) that is currently being developed by COICA. This programme aims to train monitors across the basin to detect threats to Indigenous territories – e.g. events of illegal logging or mining – and report them to a centralised system. It also seeks to provide responses to the threats, such as legal action or communication campaigns. AIDESEP is already implementing some SAT activities, and CONFENIAE soon will too.

Next is AIDESEP's Geoserver for monitoring, surveillance and early warnings. This system allows community leaders and trained monitors to detect threats and generate early warnings using an app. Additionally, it aggregates information and maps Indigenous, protected and high-pressure areas, identifying land rights and overlapping land claims, and allows communities to log their territorial demands.

Finally, this report includes observations about one of the "All Eyes on the Amazon"[3] (AEA) projects, in which COICA and CONFENIAE participate. AEA projects seek to use radar satellite technology and evidence collected by local monitors to identify and respond to deforestation and human rights violations. These programmes are supported or sponsored by organisations including WWF, Hivos Latin America and the German cooperation agency GIZ, among others – which usually lead their design.

About the organisations:

- COICA represents Indigenous organisations from nine Amazon countries and over 500 Indigenous peoples (ethnic groups). COICA's actions are oriented towards "promoting, protecting and securing Indigenous peoples and territories, through the defence of their lifeways and social, spiritual and cultural principles and values."[4]

- AIDESEP represents Indigenous organisations throughout the Peruvian Amazon. It works for the defence and respect of Indigenous collective rights, by proposing alternative development proposals – which incorporate Indigenous cosmovisions and lifeways – and raising awareness.

- CONFENIAE seeks to improve the quality of life of Indigenous communities in the Ecuadorian Amazon. It promotes community development

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1   The research discussed in this report is the result of dissertation field work with the Coordinator of Indigenous Organisations of the Amazon Basin (COICA).

2   Interview with COICA leader, July 2019.

3   https://alleyesontheamazon.org

4   https://coica.org.ec

programmes, the defence of the environment, the strengthening of Indigenous cultures and the training of Amazonian leaders.

Forest monitoring and Indigenous organisation and autonomy

There are important issues and tensions regarding how forest monitoring can support the aims of Indigenous organisations and their autonomy. Three overarching themes emerge:

Autonomy as a central goal of monitoring programmes

COICA and CONFENIAE leaders believe that monitoring programmes have an important role in achieving the goals of autonomy that many Indigenous communities and organisations have.[5] For COICA's coordinator, a monitoring system that is created by Indigenous peoples themselves can be a powerful tool to govern and protect the territories. COICA's vice coordinator has similarly stated that SAT must aid organisations in territorial management and monitoring and help them identify threats to communities and possible responses. Likewise, for a technical professional at AIDESEP,[6] this type of "territorial management" can reinforce the right of autonomy and self-determination, enshrined in the International Labour Organization's Convention 169.

Technological tools used for monitoring can support Indigenous organisations in several ways. First, they can aid them when they seek legal recognition for ancestral territories, as maps can visually portray the territory where a people[7] (i.e. an ethnic group) has traditionally coexisted. Most often, communities rely on oral records of where their territory is located, or where to find sites such as sacred places, making demands for legal recognition difficult to support. Second, the information that is collected can serve as evidence of rights violations in battles against mining or oil extraction (i.e. against companies or the government). Third, mapping tools can be useful as a stable, visual registry for territorial planning – to demarcate areas used for cultivating, hunting, fishing, etc. Further, these systems can incorporate protocols to solve conflicts that happen in Indigenous lands, and to provide rapid responses to threats faced by Indigenous communities.

For instance, a technical professional in AIDESEP explained to us that in the SAT programme, monitors send alerts about threats, and report the name and geographic location of the community using an app or by providing GPS coordinates. This is synchronised with the Geoserver. There are several categories to report threats, including "violation of social rights" (e.g. abuse of authority, acts of corruption, water pollution, etc.) and "defence of the communal territory" (invasions, property titles, overlapping territorial rights, etc.). Reports can also include the gravity and possible impact of threats, information about who is making the threats, and photos and videos. Therefore, organisations see these programmes as ways to support communities, to prevent rights abuses and to respond to rights violations.

However, leaders and technical professionals note that there are some points of tension between the monitoring programmes and the goals of autonomy. For example, there are instances where community members themselves are involved in conflicts with the state due to their "illegal" hunting or fishing. Additionally, a few communities engage in cattle ranching.[89] Therefore, leaders highlight that it is important for Indigenous organisations to control the information about threats, to monitor them independently, and to provide their own responses. This includes the ability of communities to apply their own sanctions when their members are involved, consistent with their own regulations. Similarly, we were told that national or regional organisations can intervene or apply sanctions if there are conflicts between communities or violations among the leaders of their member organisations. Second, leaders and technical professionals underscore the need to couple the monitoring initiatives with community development projects, providing alternatives for community members who engage in activities like cattle farming. Third, COICA leaders have raised concerns about the ownership and control of information. For one of them,[10] there are important implications regarding surveillance, privacy and safety – e.g. maps make the territorial distribution of communities publicly available. In militarised countries like Colombia, it might not be safe for communities if external agencies can identify exactly where houses, agricultural spaces, etc. are located. Furthermore, one leader noted that very often NGOs maintain control of the information and

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5   SAT COICA workshop, April 2019.

6   Interview with AIDESEP's technical professional, October 2019 (he is cited throughout the report).

7   I use "peoples" as it is a preferred term among Indigenous leaders across Amazon basin countries when referring to their ethnic affiliation and identity – although there are other widely used terms such as "nationalities". Terms such as "tribes" can be considered inappropriate.

8   Cattle ranching is a driver of deforestation, so many monitoring programmes often also aim to control it.

9   SAT COICA workshop, April 2019.

10 Participant observation, June 2019.

do not always train Indigenous organisations to manage and use the systems. As such, autonomous decisions become more difficult.

Collaborations with IEOs/NGOs: Contrasting visions

Forest monitoring programmes are linked to emerging international concerns with conserving the forests in Indigenous lands, to reduce deforestation and mitigate climate change. This is because there are lower rates of deforestation and higher proportions of primary forest cover and carbon storage in titled Indigenous lands.[11] The leading international mechanism for climate mitigation designed for rainforests is Reducing Emissions from Deforestation and Forest Degradation (REDD+), which requires measuring, reporting and verification (MRV) systems to demonstrate reduced deforestation. While the IEOs that are involved in these programmes do not specifically claim to implement REDD+ or promote MRV systems, their main objective is to measure the *loss of tree cover* – just like MRV systems. Scholars have noted that in rendering forests legible, MRV systems tend to standardise, simplify and erase local forest-related values and governance objectives.[12]

Related to this, some tensions emerge in forest monitoring programmes when defining aspects such as what should be monitored and why. It is important to mention that IEOs usually support Indigenous claims for land rights.[13] However – and perhaps inadvertently – IEO officials can also impose their own view of the forest (e.g. in terms of how forests are defined, what their limits are, etc.) when implementing these programmes. For instance, according to a COICA technical professional,[14] an NGO official who leads programme implementation told the Indigenous organisations involved that monitoring with GPS and drones should be restricted to forest or tree cover. This happened after a monitor reported how some people were entering their territory (to extract resources) through the river. In my interviews, Indigenous leaders said that an important problem of deforestation programmes is that they focus on – and conceptualise – trees and carbon as separate from the territory. Because of this, they often ignore the relationships that exist between trees and animals, rivers and humans.

My interviewees explained that the main unit of concern for Indigenous organisations was not the forest but the territories, which contain forests among many other elements (e.g. animals/plants, humans, sacred sites, water bodies, supranatural beings, etc.). This aspect is seldom considered in the design of monitoring programmes. Moreover, a central concern of many Indigenous organisations is to contest threats related to extractive activities (e.g. mining or oil). These may not directly or immediately represent a loss of forest cover. While many IEOs do incorporate ways to monitor and respond to such threats, a more holistic vision of the character and purposes of monitoring should always be present in these programmes.

Monitoring programmes, Indigenous knowledges and the ordering of territories

Indigenous technical professionals also highlight the potential synergies of integrating Indigenous knowledges and ancestral ways of ordering the territory with the different monitoring technologies. This is most visible in what organisations call communal zoning. For instance, AIDESEP's Geoserver seeks to apply ancestral Indigenous knowledges when mapping. A technical professional explains that there are places where community members have hunted throughout the years – because there is a source of water or certain plants that the animals eat at that location. Communities avoid cutting down those plants and care for that source of water. If they did not do this, the animals would stop coming. This knowledge has been orally transmitted throughout the years, but with mapping technologies, there can be a registry of the ancestral places identified for fishing, hunting, cultivating, etc.

As a manual of the Colombian School of Political Training of Indigenous Leaders explains, Indigenous territories are ordered according to rules established in the cosmovisions and ancestral laws of communities.[15] The different elements of the territory are organised according to different functions or historical relationships with the community. However, these ways of organising the territories are not usually considered by IEOs and other institutions which promote monitoring programmes. Therefore, the possibilities – and potential drawbacks – of the integration of these knowledges with monitoring technologies need to be further assessed.

11 Blackman, A., & Veit, P. (2018). Amazon indigenous communities cut forest carbon emissions. *Ecological Economics*, *153*, 56-67.

12 Gupta, A., et al. (2012). In pursuit of carbon accountability: the politics of REDD+ measuring, reporting and verification systems. *Current Opinion in Environmental Sustainability*, *4*(6), 726-731.

13 For example, see https://alleyesontheamazon.org/about/what-we-do

14 Participant observation, January 2019.

15 OPIAC School of Political Training. (2018). *Programa de Territorio y Biodiversidad*.

Conclusion

This report has outlined some important aspects to consider in the design and implementation of forest monitoring programmes in Indigenous territories of the Amazon basin. In summary, they are: the relationship between the programmes and Indigenous goals of autonomy and self-determination; the contrasting visions of IEOs and Indigenous organisations (i.e. in respect to what should be monitored, why and how); and the possible synergies between monitoring programmes and Indigenous ways of ordering the territory.

Overall, this report recommends considering technology and programmes for forest monitoring as tools that are not politically or culturally neutral. This has several implications. To begin with, when designing these programmes, organisations should be aware that addressing their technical aspects – e.g. what specific technologies to use, what (formally trained) technical professionals to hire, what sites to incorporate – is not enough. Programme design and implementation should always respond to the specific needs, goals and worldviews of the Indigenous organisations and/or communities that are involved.

Moreover, all organisations involved must carefully consider how different positionalities, power relations and political goals shape these types of initiatives from their very inception. This includes how conceptions of nature/the territory may be different among partners, or what knowledges underlie the different ways to order, plan for or monitor the territories. Correspondingly, these considerations must also be respectful of communities' decisions regarding what types of information and knowledges they wish to share or to keep to themselves.

Action steps

The following factors need to be taken into consideration in regional forest monitoring programmes:

- In designing programmes, IEOs should identify and understand the main purposes or goals that Indigenous organisations have when engaging with them. IEOs must be aware that these may involve contesting extractive activities led by governments and corporations.

- Monitoring programmes must respond to more holistic conceptions of the territory that are fundamental for Indigenous organisations.

- After careful deliberation with communities and/or organisations, programmes should clearly delineate what will be monitored and how. They should always involve different community members – e.g. women and youth – in these decisions.

- Programmes must respond to communities' own definitions and goals of autonomy and sustainable development or "Vida Plena".

- Programmes should at the very least recognise and respect the ways in which territories are ordered according to Indigenous cosmovisions and knowledges. They should also work to centre communities both in programme conception and implementation.

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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