


# FROM/TO COMMUNITIES ENGAGED AGAINST

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Data are a strength, whether we realize it or not. They can bring core questions from the communities' daily experiences to broader attention. They can support evidence-based and promote practical actions. Become aware of the data we are handling and unleashing their power through visualization is a process that requires motivation and creativity at the time. Communities working to reduce plastic pollution around the Mediterranean hold both.

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[1] A set of priority Countries for BeMed consortium has been identified as: Albania, Algeria, Bosnia-Herzegovina, Egypt, Lebanon, Libya, Morocco, Montenegro, the Palestinian Territories, Tunisia, Turkey, Cyprus, Croatia, Malta and Greece. The project led by University of Salento involved participants from these Countries and former or current BeMed awardees, aligning with the program priorities.

## BeMed vision for actions in priority Countries

The Beyond Plastic Med (BeMed) association promotes lines of action to counteract plastic pollution across the Mediterranean. One of them is the **“Assemble, Allies and Mobilize”**, which aims at **connecting and sharing successful practices** across actors.

While BeMed laureates, awarded for projects, represent the background and work done through years of active citizenship, it is their communities as a whole that can be considered actors. Through their continuous feedback connecting the social- ecological environment and the project tasks, they are fundamental parts of the change.

**In this context, it is essential to empower a community by letting its voice heard above the plethora of information that reaches us daily.**

**Data and data visualization** are acknowledged methods for making impactful communication. A pleasant and functional image **can deliver our message a long way and help make a change.**



Image source <https://www.beyondplasticmed.org/en/annuaire/>



## The relevance of community-based data

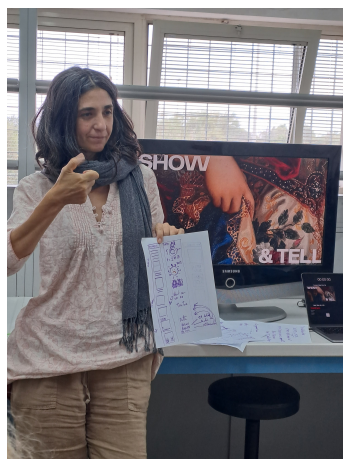
While “big data” has been a buzzword for a long time, **“small data”<sup>[1]</sup> is an overlooked analytical approach to natural and virtual life.** However, it applies to the same scale of analysis of many issues, especially those occurring locally. This is the very same scale of many social-ecological system analysis, where the concept of social ecological system, as proposed by E. Ostrom in 2009 <sup>[2]</sup>, is tied to well-defined ecological and social stocks and capitals available within the system’s boundaries <sup>[3]</sup>. **Local communities and their “small data” are paradigmatic** to this.

Governance is called to act, to grant sustainability to the system, considering the internal and external drivers it is subjected to. Information from the community level is essential to the process. **If, on one hand, data should flow out of the community and reach governance, data should also be returned** to the community to be used to claim, get aware of gaps and potentials **and bring transformative change.**

**Data humanism** is an approach to data that intends to make information available, visible, and reliable to reach awareness and communicate. Data humanism **leverages on data visualization**, as it was beautifully explained by Giorgia Lupi <sup>[4]</sup>.

As a medical illustrator I am very aware of the importance of visualization to share information. We were overwhelmed with the global data; focusing on local data can be very practical to reach local people’s mind because we are telling the community story.

Begoña Rodriguez Rueda



Lighters could be refilled, but if we don't...how many monuments would be possible to build with lighter trash?

[1] Alice Avallone, 2021 # Datastories: seguire le impronte umane sul digitale. HOEPLI EDITORE.

[2] Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. Science, 325(5939), 419-422.

[3] Basurto, X., Gelcich, S., & Ostrom, E. (2013). The social-ecological system framework as a knowledge classificatory system for benthic small-scale fisheries. Global environmental change, 23(6), 1366-1380.

[4] <http://giorgialupi.com/data-humanism-my-manifesto-for-a-new-data-world>

Communication about **plastic pollution often goes visual**, though it is generally through images of environmental damage, such as dead or struggling wildlife and landscapes ruined by littering. Data are usually presented as global patterns or as case studies **impressive yet far, physically and conceptually, from daily lives** (think, for instance, the great Pacific gyre).

Though impactful, this information might not move communities tied to entirely different environments, facing other daily life issues. Neither does it move local managers or enterprises, who indeed **might be willing to get informed and show awareness -until these stay outside the boundaries of their businesses**.

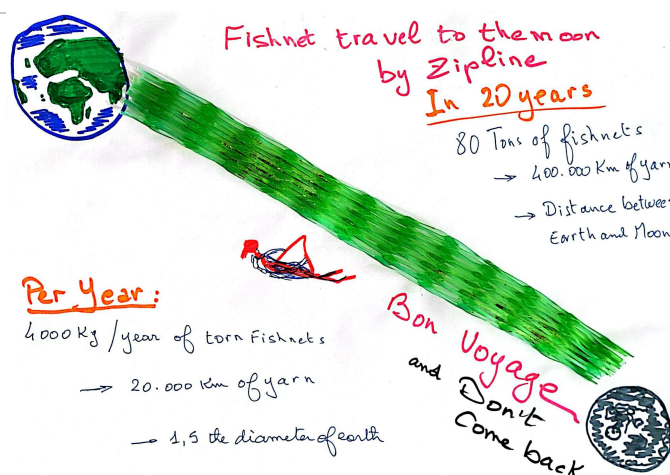
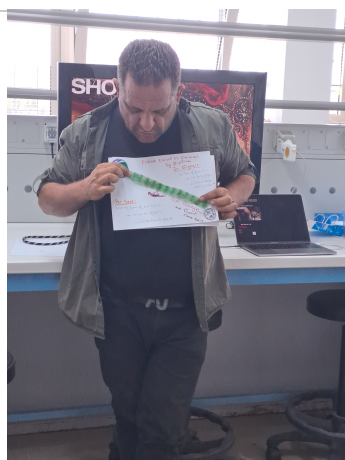
In some cases, **data** provided by citizens and mediated by NGOs **drove evidence-based policies**, such as the EU Directive 2019/904<sup>[5]</sup>, banning single-use plastics items after the analysis of data revealing that the top 10 single use items found on beaches Europewide were reported, along to fishing gears, to be responsible for 70% of marine litter in the EU<sup>[6]</sup>.

But **what about visualizing this very same information?**

Presenting it with a timeline showing that we only recently began to “need” all these plastics? Pairing the information with an action to reduce their consumption? Data visualization is based on, needless to say, data. **It depends on us**, whether scientists, clean-up participants, or hotel owners, **to provide the kind and quality of data we need to make our voices heard, empowered, and thrive in a healthier environment.**

“The training we had was significant for our organization; we have been struggling for a long time with illiterate fishermen in conveying messages that seemed not interesting to them. Creating data visualizations for illiterate fishermen can be incredibly valuable. Visuals can share information effectively without relying on text, especially when using examples from their working life (fishnet distance to the moon). Simplicity, clarity, and user-friendliness are fundamental when presenting or sharing data for illiterate populations. We aim to empower them with information that can improve their lives and reduce plastic use.”

Roy Abijaoude



Yarn of discarded fishnets would connect Earth and Moon in 20 years

[5] <https://eur-lex.europa.eu/eli/dir/2019/904/oj>

[6] [https://environment.ec.europa.eu/topics/plastics/single-use-plastics\\_en](https://environment.ec.europa.eu/topics/plastics/single-use-plastics_en)

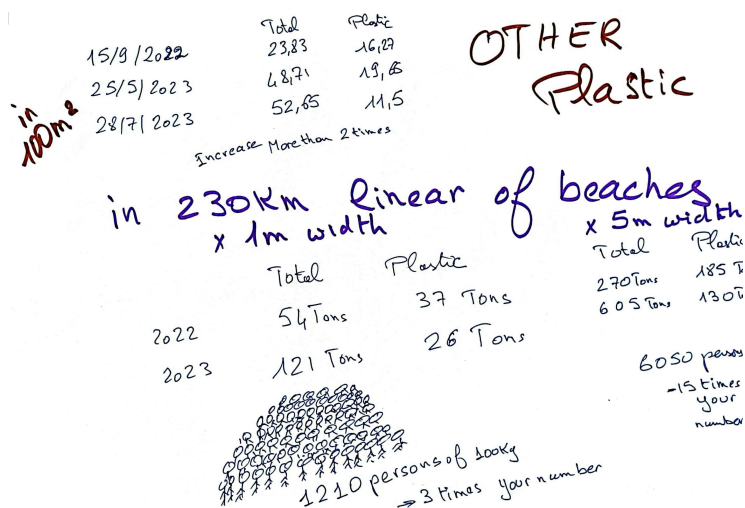
# Data visualization as community empowerment (with some BeMed experiences)

We all produce data, although we may not be aware of that -and not record them. Our daily choices, their timing, their placement in a local, national, and international context, all represent information<sup>[1]</sup>. And it all can be recorded to show the potential for change and monitor it. Communities are often overlooked, although they are the core of grassroots change. Data visualization can be **an impacting way to bring communities into the spotlight and carry their messages** to the target of their choice (municipalities, tourists, e-commerce platforms, etc). Stories are to be told with data<sup>[2]</sup>.

A what, when, where, and why to show contextual evidence and call to action.

This is not taken for granted though. **It is necessary to start exercising to see data everywhere and see them as a beautiful object to be communicated.** Time needs to be spent in tabulating data (or guiding people to do so), in order to **make our data usable for information, baselines for monitoring, legacy.**

**The habit** of placing data in their context, along timelines<sup>[3]</sup>, comparable with other units (an almost sure “wow factor”)<sup>[4]</sup>, and defining events that might have acted as internal (e.g., a school that uptakes good practices in reducing plastics) or external drivers (e.g., Covid-19) **needs to be acquired.** But once done, creativity can be unleashed, and advocacy channeled in sending out messages -with data.



Scribbling and sketching: part of the process of thinking our way to data visualization and communication

[1] <http://www.dear-data.com/theproject>  
[2] Knaflic, C. N. (2019). Storytelling with data: let's practice!. John Wiley & Sons.  
[3] [www.dataphys.org/list/](http://www.dataphys.org/list/)  
[4] [www.themeasureofthings.com](http://www.themeasureofthings.com)

The group of contributors to this white paper went through this whole process hands-on and just started to scratch the surface of the immense richness that the diversity of communities holds. From the up-cycling of plastics blended with handicraft tradition, to the establishment of a circular pathway for fishnets at the end of their fishing life, to the labeling of hotels and businesses as “low plastic zones”, to the direct engagement of beach visitors and divers into monitoring, there is an extreme variety of experiences.



Writing down data from restaurants in Kotor, Montenegro

Common threads to all those activities emerged:

- **Potential conflicts over waste management**, as citizens cannot keep cleaning up when, over time, they see no difference in the amount of litter found in the environment. Moreover, in territories **with pre-existing tension among different communities, the allocation of landfills can harshen conflicts**. Messages should then end with a call for action that goes beyond the community level, asking to reduce the production of unnecessary plastics items. Because as soon as they are produced and available, someone will use them, and some community -even if far away- will have to bear the brunt of that.
- **The valuation of our choices**. Monetization is indeed a powerful driver. And, with some search and exercise, it can be visualized too. This can be **particularly appropriate when considering community-level businesses**, as they often need support to invest in change, especially when benefits may not be visible immediately. To compare them and monetize the activities of upcycling (directly, with data from sales) and clean-ups (indirectly, after assessing the willingness to pay visitors for a healthy beach compared to a plastic- contaminated one).



Visualization allows us to directly communicate data. **It gives relevance and contextualizes actions and can tell stories.**

However any kind of information must be carefully selected and streamlined to reach the target. **There is no one-size-fits-all in communication**, especially now that social media exposes us to massive amounts of unfiltered information.

The message needs to be sent out to a well-defined audience, whether policymakers, tiktokkers, or the community who outsourced the data.

The contributors noticed that data visualization is beneficial in those contexts **where the target is illiterate**. But also, **when the attention span is limited and visual media are preferred**, as in the case of most genZ-ers browsing for information<sup>[5]</sup>.

| Audience                          | Think                           | Feel                   | Do  |
|-----------------------------------|---------------------------------|------------------------|---|
| HoReCa Producers                  | To think of alternatives.       | Responsible            | Redesign plastic products.<br>Use alternatives.                       |
| <del>Consumers</del><br>Consumers | It is also our fault.           | Embarrassed<br>Ashamed | Use reusable products   |
| Government                        | Regulations are our obligation. | Responsible            | Adopt regulations which lead to decrease of single use plastic usage. |

[5] Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. Technology in Society, 65, 101565.

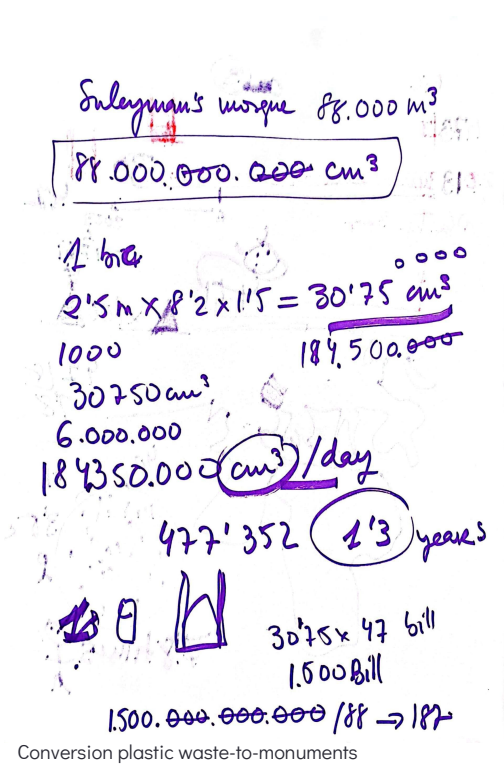
# A call for data literacy and data visualization

Data collection takes time and energy and is a step often skipped when working with local communities. However, it can **become a habit, be fun and powerful, and allow to place communities into a context.**

This process tightly relates to data literacy, as the ability to read, understand, create, and communicate data as information. **An initial effort in this sense will quickly pay back** by establishing a positive, reinforcing loop between collecting and organizing data to show, and make waves.

We shall get used to move by questions:

Who? Where? What? Why?, to tell the story of our communities, their struggles and goals, ending with an call for action.





In many cases, data will have gaps.  
Brainstorming about data with the community will help to fill them.

Data may be related to internal and external drivers if considering the boundaries of the communities.

Identifying them will help in understanding the effects they might have had (or are still having) on the patterns recorded. The issue of plastic pollution is often tackled at community level, and the **information** and insights gained so far **really needs to be made visible and impactful**.

A work of structuring, synthesizing, and prioritizing is required.



Data from Low Plastic Zone initiative, Green Home Montenegro: plastic straws produced yearly by 6 restaurants were enough to connect Adriatic shores -the same path that participants from Montenegro traveled to attend the BeMed workshop

We invite you to think about the overall question, “Why would anyone care about these data?”  
and make everyone care about it.