Activists as alternative science communicators. The NGO "Danish Seed Savers": science communicators and activists but questionably alternative

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Abstract

This commentary describes the work of the NGO Danish Seed Savers, working with heritage plants, highly prioritized by The Food and Agriculture Organization of the United Nations. The Danish Seed Savers act as activists, when they work to change the implementation of EU seed-legislation. At the same time, they have a seat in the Danish Committee on Plant Genetic Resources and help the Ministry of Food to protect and communicate about heritage plants. The commentary reflects on the role of the Danish Seed Savers. They are science communicators and activists but asks: are they alternative?

Keywords Environmental communication; Science and policy-making

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Science journalists are traditionally seen as communicators who transport knowledge from scientists to public readers and viewers and, in this process, they align themselves with the scientific profession by reporting findings as they are provided by scientific institutions [Maeseele, 2009]. However, when science is combined with economic interests or enrolled in debates and conflicts the idea of knowledge as a common good can only be retained by breaking with this convention. Maeseele refers to the case of GMOs and the related debate and proposes that science journalists see themselves as being on the same side as the public rather than as a neutral extension of scientific institutions. Furthermore, it is suggested that they use their communication to discuss and reflect on activities in the scientific field, and here the role of NGOs as *alternative* science communicators could prove valuable as a voice in the discussion. *Alternative* is defined here as science communication that does not come from scientific institutes or "institutional" science communication [Maeseele, 2009].

Some NGOs work as activists. Fähnrich [2018] describes activists as wanting to influence political, economic, and civic decision-making and action in order to

initiate or prevent social change. Their target groups are political and economic actors or the public at large, and their instruments are e.g. campaigns, symbolic events, and social media communication. Yearley describes the work of environmental action groups as a fusion of scientific communication with "other strategies in largely opportunistic ways", from direct destruction of crops (this was an anti-GM group) to detailed research work — and everything in between [Yearley, 2008, p. 165].

Fähnrich assumes that activists are not scientists or science communicators associated with scientific institutions but recognizes that activists take up a central role by translating scientific findings and disseminating environmental issues to the public. Davis et al. [2017] state that NGOs "must rely on other people's knowledge that they can't judge as peers" [2017, p. 5]. At the same time, activists necessarily speak from "value positions" and always pursue certain interests. Therefore, Fähnrich assumes, the way they use scientific information and evidence cannot be considered neutral and objective [Fähnrich, 2018].

Environmental campaign organizations are described as "significant science communication actors" by Yearley [2008, p. 160] as the persuasive power of their message is based on the factual accuracy of their scientific claims. They are not matters of opinion. However, Yearley argues, that whether authorities — and the public — tend to listen to environmental pressure groups is more a question of their message being convenient for them than their argument being supported by scientifically waterproof claims. Additionally, mainstream opinion does sometimes prove to be mistaken, and this argues for the need to listen to many different and well-argued voices in science communication [Yearley, 2008].

One of these voices could be the voice of NGOs. Some organizations go to great lengths to communicate science to the public by, for instance, arranging courses and talks for members and non-members, by writing articles and disseminating scientific knowledge through their homepage and social media. NGOs' communication is often seen in opposition to scientific institutions and authorities, but the picture is much more complex. To expand the view on NGOs and the way they engage with science, scientific institutions, and authorities this commentary will look at the NGO Danish Seed Savers as a voice in the scientific field it is part of: *Plant Genetic Resources for food and agriculture*. This commentary is an external as well as an internal view: as a horticulturist and a science writer, I have communicated scientific knowledge of Plant Genetic Resources (PGR) for many years. In my doctoral thesis about the public communication of PGR I analyzed how the Danish Seed Savers — among others — communicated in the field, and after finishing my thesis in 2017, this NGO has been the main base for my work. The NGO has hosted my projects, and from 2020 I have started working for them as a scientific administrator, helping to take care of reports and communication to members, authorities, and the public.

The Danish Seed Savers were established in 1986 with inspiration from Seed Savers Exchange in the U.S. Similar organizations are for instance Heritage Seed Library (U.K.), Pro Specie Rara (Switzerland), and Arche Noah (Austria).

The aim of the Danish Seed Savers is preserving the diversity of heritage plants by locating, collecting, registering and sharing seeds from plants among their

members. The Danish Seed Savers' community seed bank has over 500 varieties of seeds that grow in members' gardens. The organization sells their seeds to non-members and communicates to members and the wider public at meetings, markets and festivals. Members organize and take part in seed swaps, and provide free courses in seed saving that emphasize the importance of protecting heritage plants. The organization has its own webpage and a magazine. It is active on social media (Facebook-members: 4700) and communicates in many magazines and newspapers [Growing Seed Savers Project, 2020a; Foreningen Frøsamlerne, 2020].

The Danish Seed Savers are part of the scientific field, defined by the United Nations as, *Plant Genetic Resources for Food and Agriculture*. "Plant genetic resources for food and agriculture means any genetic material of plant origin of actual or potential value for food and agriculture" [Food and Agriculture Organization of the United Nations, 2009, article 2]. The Food and Agriculture Organization of the United Nations (FAO) further defines Plant Genetic Resources (PGR) as the "raw material indispensable for crop genetic improvement. . . and are essential in adapting to unpredictable environmental changes and future human needs" and thus to ensure sustainable growing and food for the future [Food and Agriculture Organization of the United Nations, 2009].

FAO organizes worldwide efforts to use and protect PGR in sustainable ways through the International Treaty on Plant Genetic Resources for Food and Agriculture (PGR-Treaty). 146 of 193 independent nations worldwide have signed or ratified this treaty [Food and Agriculture Organization of the United Nations, 2020], which makes each nation responsible for conserving and using their PGR in sustainable ways, and raising public awareness.

Denmark signed the PGR-Treaty in 2002. The Ministry of Food organizes the work, (growing, preserving, testing, describing, communicating PGR), rooted in the Danish Committee on PGR. The secretariat of the committee has made a strategy and a series of 3-year action-plans [The Danish Ministry of Food and Environment, 2020]. The committee has 15 members representing: 2 universities (6 members), 3 breeder-organizations, Danish Agriculture & Food, Danish Horticulture, the National Organic Association, Ministry of Food, Ministry of Culture, Ministry of Environment, Crop Innovation Denmark, Tystofte Foundation, and the Danish Seed Savers.

The Danish Seed Savers' position in the PGR-field is also seen when they are mentioned in 2019 in the FAO-report 'The State of the World's Biodiversity for Food and Agriculture' (building on country reports):

> "Several country reports mention NGOs specifically dedicated to promoting the conservation and sustainable use of traditional plant varieties or animal breeds (. . .) These NGOs often collaborate with producers, private companies and the general public on conservation and awareness-raising projects. Examples include Frøsamlerne ("seed savers") in Denmark, which offers courses on seed propagation for interested non-experts." [Food and Agriculture Organization of the United Nations, 2019, p. 387]

The Danish Seed Savers is also considered part of the 'Plant Genetic Environment' in Denmark. This was defined for the first time in the Danish action-plan for PGR

2011 to 2013 as researchers, farmers, local "enthusiasts", chefs, museum staff, plant breeders, officials, etc. The action-plan underpins the 'Plant Genetic Environment's important teamwork with the Ministry of Food and describes the environment as "remarkable for gathering an unusually broad group of stakeholders (...) "The group is (...) committed and has a high level of initiative and drive (...) and there is a good teamwork between these very different users. The diverse approach to the field is seen as a force that stimulates the activities and development." [The Danish Ministry of Food, Agriculture and Fisheries, 2011, pp. 39–40].

In 2009, I started project-managing demonstration-projects about PGR at the Danish Open Air Museum, which is part of the National Museum. The museum displayed old varieties of grains, vegetables, and fruit to their visitors and through these projects I started to collaborate with farmers, universities, pometa (collections of fruit trees), NGOs, and other museums — I became part of the Plant Genetic Environment. From 2012 to 2016, I wrote my Ph.D.: "Communicating Knowledge of Plant Genetic Resources to the Public: a study of demonstration projects in a grant-scheme in the Danish Rural Development Program". I conducted an analysis of the Danish communication of PGR that was supported through a grant for demonstration projects given out by the Ministry of Food [Windfeldt, 2017].

The Danish Seed Savers was supported by the grant to create two of the national demonstration projects. I analyzed their understanding of PGR and the purpose of the Danish grant — along with eight other stakeholders — as part of my Ph.D. To do so I drew a concept map [Novak and Cañas, 2008] of PGR in collaboration with a representative from each of the nine stakeholder groups and undertook qualitative interviews. The concept map I drew with the leader of the Danish Seed Savers (see Figure 1), shows her associations with the subject 'plant genetic resources'. The FAO definition and the purpose of the grant scheme are covered by the three green circles to the right. Here she elaborates on the three words:

Plants, which could be all parts of cultivated plants (root, stem, flower, fruit), and wild plants that can be eaten. Also the wild relatives to our crops (e.g. wild kale or carrot) can be a genetic resource to agriculture.

Genes, which are the raw material to continue the growing of a plant, but also to improve it through breeding. We keep plant genetic resources in a gene bank to avoid losing the possibilities for future use of any plant gene.

Resources, which are something that we've got or might get in need for in the future. Talking about old varieties of plants they are a resource if they have a value that makes them interesting for conservation. Different users have different need of resources, which make e.g. breeders and museums want to use plant genetic resources in different ways.

In the following qualitative interview the leader of the Danish Seed Savers expanded the concepts of PGR:

> "Thinking of *plants* we refer in particular to the cultivated and wild plants that can be eaten and become resources. *Genes* refers to the approach from the gene bank: "We save the genes". They can be taken out and used in other ways for

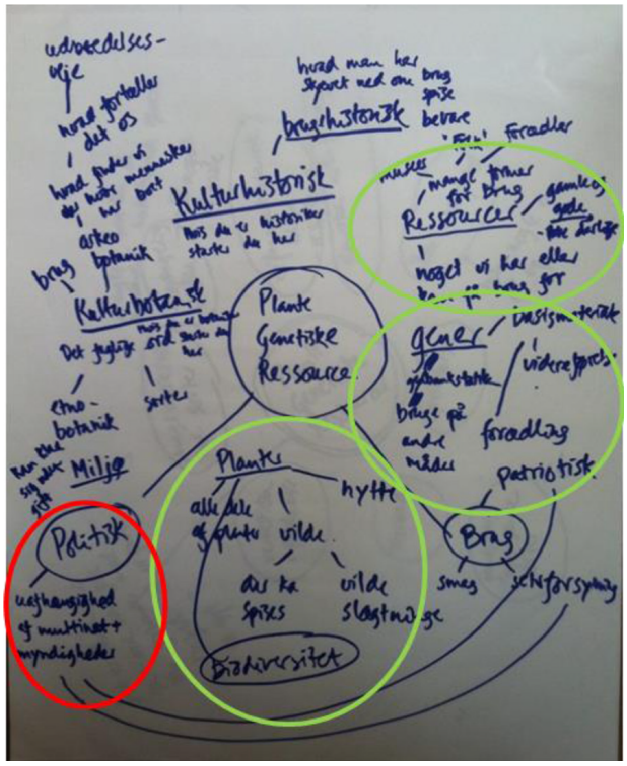

Figure 1. The concept map drawn with the Danish Seed Savers showing their associations to the subject 'plant genetic resources'. The FAO definition and the purpose of the grant scheme is covered by the three green circles to the right (translated from Danish): *Resources:* something that we've got or might get in need for. Many types of use by ('people', breeders, museums). Old and good — not bad. Conservation. *Genes:* raw material, continuation, breeding. The gene bank idea is that genes can be kept and used in other ways. *Plants:* all parts of plants, cultivated, wild, that can be eaten, crop wild relatives. A special angle to the subject reflecting the identity and way of working with PGR by this NGO is seen in the left, red circle: *Political:* independency of transnational companies and authorities.

> breeding. Scientists don't think that we need more than one of the same varieties — but this does not cover the cultural history or cultural botanical approach: "How have the plants been used, eaten and conserved?" *Resources* are "something that we've got or might get in need for. Museums need other resources than breeders and restaurants"." [Windfeldt and Madsen, 2018, p. 515].

A special angle to PGR, reflecting the identity and way of working with PGR by this NGO is seen in the left, red circle in Figure 1: *Political:* independence of transnational companies and authorities. Moreover, while explaining her understanding of PGR in the following interview, the leader of the Danish Seed Savers elaborated on this by reflecting on PGR as being *political:* "We can grow and save our own seeds and thus be independent of companies and governmental rules" [Windfeldt and Madsen, 2018].

It is clear from the analysis in my thesis that the Danish Seed Savers has scientific knowledge of PGR and furthermore see themselves as a political organization. In addition, the Ministry of Food acknowledges their work, by giving them a seat in the Committee on PGR, making them part of the national demonstration projects, and seeing them as part of the Plant Genetic Environment.

In the following section, I will give three examples of how they communicate science and engage with scientific institutions and authorities to discuss whether they are science communicators, activists or alternative science communicators.

Example 1: in 2008 the Danish Seed Savers was part of a group concerned about preservation of heritage plants. The group also consisted of the Nordic Gene Bank, some of the Danish open-air museums, and the Ministry of Food. In common, they

applied for a grant to the Nordic Council of Ministers' 'New Nordic Food' program to make the conference "Plants that Tell Stories". The Seed Savers hosted and contributed to the conference, where scientists, museums, NGOs, breeders, chefs, and farmers from the five Nordic countries gathered to present their research, projects and dreams of heritage plants. This was the beginning of the Plant Genetic Environment, and afterwards the Seed Savers were invited to have a seat in the Danish Committee on PGR.

Comment: as the Danish Seed Savers communicated science in cooperation with scientific institutions and authorities, it must be characterized as science communication — nothing alternative, according to Maeseele [2009].

Example 2: in 2014 the Danish Seed Savers made a series of 'seed pop-up' actions, where people gathered to exchange unregistered seeds which was considered illegal in Denmark, as in most EU countries. The actions were to demonstrate that EU-seed legislation was criminalizing hobby growers from swapping and saving seeds and at the same time made growing and conserving heritage plants difficult. Following this, the organization started a dialogue with the Ministry of Food that changed the way the EU's seed legislation was implemented in Denmark in 2015. With the changed legislation it is now possible to exchange seeds for non-commercial use — and 'Seed Savers' are even mentioned in the title of the official instruction from the ministry [The Danish Ministry of Food and Environment, 2015]. Since then the Danish Seed Savers have participated in international efforts at NGO level to change legislation in other countries, for example, in the Baltic Countries through the project 'Growing Seed Savers' [Growing Seed Savers Project, 2020b].

Comment: the Danish Seed Savers are here clearly showing themselves as activists, since they made an illegal action with the desire to make changes in the way EU Seed-legislation was interpreted [Fähnrich, 2018; Yearley, 2008]. They were in opposition to the law administered by the Ministry of Food, but if they had not been able to judge knowledge of PGR and seed legislation as peers I doubt that they would have been able to make the ministry understand why and how it would be appropriate to change it. Now they are part of the international PGR-work at NGO-level. Does this make their science communication alternative?

Example 3: in 2018, the Danish Parliament decided to reduce the contribution to genetic resources from the Financial Act to a minimum, which means that the secretariat of the committee on PGR still exists, but there is only very little funding for activities [The Danish Ministry of Food (Danish Committee of PGR), 2019]. The protection of PGR is now difficult but Denmark is still committed to protecting and communicating about PGR according to the FAO-treaty. The chair of the Danish Committee on PGR called on all members to communicate the consequences to Danish politicians and the public. The Danish Seed Savers co-wrote a document together with NGOs protecting genetic resources of husbandry to argue why protecting genetic resources will be an important Danish investment for the future. The document (knowledge building on academic sources, co-written and peer reviewed by academics as well as practitioners in the field) states very clearly that Denmark has a FAO-commitment to protect PGR, and that neither the Committee

on PGR nor the Ministry of Food are fulfilling their obligations [Windfeldt and Nielsen, 2019]. Afterwards the organizations had the opportunity to meet with politicians and communicate in various media [Foreningen Frøsamlerne, 2019].

Comment: here the Danish Seed Savers took up the call from the chair in the committee to communicate about the poor conditions made for PGR by reducing funding. They are themselves part of the committee, and they criticized the authorities building on academic work. Does this make their science communication alternative?

To conclude, the NGO Danish Seed Savers is part of the scientific field, *Plant Genetic Resources*. They have a seat at the official table, and they help Denmark fulfil their obligations according to the PGR-treaty in FAO [Food and Agriculture Organization of the United Nations, 2019]. The Ministry of Food acknowledges that a diverse approach to the field is seen as a force that stimulates activities and development [The Danish Ministry of Food, Agriculture and Fisheries, 2011]. They are communicating knowledge of PGR to various target groups, sometimes as neutral knowledge, sometimes as a critical voice — or even activism — in the debate about the importance of preserving heritage plants, in Denmark and worldwide.

Maeseele [2009] defines *alternative* science communication as communication that does not come from scientific institutes or "institutional" science communication. This points to a difference, perhaps even a conflict between "institutional" science communication and science communication coming from NGOs. This case study reveals that science communication in this space has more facets. NGOs are not necessarily communicating in opposition to universities or authorities. They might be part of the same scientific field, they might have the same educational level required to understand the science as peers, and they might even work for the same overall purpose. But as the NGO is independent of economic and other interests, it has a unique position in the field allowing it sometimes to work together with authorities, and sometimes to be critical or in opposition to them to support particular aspects and interests in the field. This makes NGOs part of the mix that makes up science communication. They are fulfilling a particular role within the political space, which is a science communication role, and sometimes this leads to changes in society. Instead of labelling some science communicators as alternative, looking at the arguments in what is actually communicated — by universities, ministries, NGOs, or other communicators — could serve knowledge as a common good better. We can call it 'alternative', but maybe words like 'critical' or 'independent' would describe their role better. Or simply: 'science communicators'.

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