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Peasant seeds in Europe: stakes and prospects[1]

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Abstract: The myth of technological progress in agriculture and then modern plant breeding have resulted in a separation of farming from breeding activities. Seed laws have also contributed to this outcome (e.g. by imposing strict rules for the entry of varieties in the official catalogue). Nowadays, some pioneers, among them farmers rejecting industrialized agriculture and more often practising organic agriculture, are proposing a different option.
In Europe, since the beginning of this century, they have been organizing themselves in networks: the *Réseau Semences Paysannes* in France, the *Red de Semillas* in Spain and the *Rete Semi Rurali* in Italy. Their members are farmers, consumers and scientists working together in order to reconsider the scientific, technical and legal aspects of seed production. These new varieties are designated 'peasant varieties', a concept that encompasses two main aspects: the seed, the reproductive part of the plant linked to its terroir, and the variety, shaped by history and coevolved with farmers. Scientists working with these networks are developing participatory plant breeding projects, which aim to broaden agrobiodiversity by creating so called new peasant varieties. The basis of these projects comes from old local varieties and landraces conserved in seed banks. In Europe, the legal framework has evolved since the establishment of 'conservation varieties' by directive 98/95. The European research project Farm Seed Opportunities is under way to support new seed policies, in the light also of the different national contexts. The debate in Europe now offers a range of seed systems models. It is time to enlarge this debate to southern countries through the sharing of knowledge between farmers of the North and the South, aiming at conserving agrobiodiversity and promoting rural innovation.

Keywords: Agrobiodiversity, farmers' organizations, innovation, participatory approaches, seed production

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The context for seeds in Europe and the emergence of 'peasant seeds'

'Seed is the grain one sows,' says the Larousse dictionary. This is a complex notion, including both the variety and the seed. Each of these two factors refers to processes of creation and production. 'You reap what you sow,' says popular wisdom. The seed sums up in itself agricultural, economic and ethical choices. The myth of technical progress has imposed a dominant conception of 'plant improvement' accompanying an industrialization of agriculture and a division of labour where the farmers' interests are not necessarily those of the seed breeder. A handful of pioneers are today proposing an alternative to these choices imposed in the 20th century. These pioneers are citizens, farmers, consumers, traders, researchers etc., combining their skills to endow themselves with the resources for working with seeds conceived for an agriculture that lends living beings, including plants, another dimension than that of material, commercial commodities. The concept of 'peasant seeds' thus embraces a seed, a plant's organ of reproduction that is a material condensate of its *terroir*, and a variety, shaped by history and coevolving with the peasants. A farmer who sees himself as a 'peasant' gives his mission a strong attachment to the *terroir*, defined by its soil, its climate, its people and their history. He no longer wants to be an 'agricultural exploiter'. The participants in developing 'peasant seeds' are testifying to the emergence of a concept in Europe, to the organization of a network of national movements, to the regulatory evolution necessary for legal recognition of their existence. Finally, they hope to associate their know-how and their questions with those of farmers in the countries of the South who are wondering about and organizing the future of their own plant heritage.

The market for seeds (production, sale and exchange) is a very closed one in Europe. Quality and intellectual-property standards make them into commercially standardized products. The legal and commercial room for agricultural biodiversity based on the varieties capable of evolving and adapting to their environment is increasingly limited (Velvée, 1993; Fowler and Mooney, 1991). The dependence of farmers on seed industries is becoming increasingly marked. Nonetheless, in Europe the proportion of seeds produced on the farm (Table 1) is not negligible, and for the seed industry it constitutes a gap to fill (Le Buanec, 2005; Grain, 2007), consisting of both farm seeds (protected varieties reproduced on the farm) and illegal seeds.

Moreover, the common agricultural policy has accentuated the 'modernization' in European farming systems, with aid to research in agronomy and laws on seeds that have helped to separate the peasant ever further from the seeds. And the

Table 1 - The source of cereals, leguminous plants and potatoes in Europe (Le Buanec, 2005, modified)

COUNTRY	CROP	SEEDS		
		Certified	Farmers	Illegal
France	Wheat	58	42	
Germany	Cereals	54	40	6
	Potatoes	44	56	
Poland	Wheat	7	93	
	Oats	5	95	
UK	Wheat	51	31	18
	Winter barley	55	15	30
	Spring barley	66	14	20
	Beans	37	18	45
Italy	Hard wheat	90	10	
	Soft wheat	70	30	
	Alfalfa	75	5	20
	Barley	80	20	
Holland	Potatoes	61	39	
	Cereals	65	35	
Finland	Cereals and Legumes	30	47	23
Sweden	Cereals	72	28	
	Potatoes	35	65	

seeds have become a business, the business of seed industries. (Pistorius and van Wijk, 2000).

In this difficult context, a movement to regain the development of seeds in the countryside is appearing. The varieties designed and distributed by the seed firms are aimed only at industrial agriculture and do not meet the needs of other kinds of agriculture. Peasants, in organic farming (OF) or on the margins of the agri-business chain (Deléage, 2004), see their limits as:

- Technical, with DUS (distinctnees, homogeneity, stability) characteristics according to the UPOV (*Union internationale pour la protection des obtentions végétales*, www.upov.it) system that are incompatible with the ecological qualities required for their kind of farming; for the species concerned, particularly the major crops, the DUS requirement is supplemented by an assessment of the value of coltivation and use (VCU)) that guides genetic progress in a single direction, most often defined in terms of yield in intensive agriculture, or criteria of industrial quality;
- Political and legal, raising questions of how to design the regulatory space so that the peasant can regain his ancestral activity of producing his own seeds,

and especially some sort of intellectual property over the varieties;
- Scientific, with the introduction of biotechnologies (GMOs, but also cellular fusion and multiplication, artificially-induced mutations etc.) that violate OF principles, as well as the recommendations currently laid down by the Plant Breeding Draft Standards developed by the International Federation of Organic Agricultural Movements[2].

In Europe, starting from there, peasants are seeking to re-appropriate the basis of their activities: seeds in all their dimensions, both intellectual (varieties) and physical (the seeds themselves).

The regulatory context is starting to evolve to offer an alternative to just the varieties emerging from improvements to cultivated species in the last 50 years and registered in an official catalogue. In 1998 the European Union (EU), concerned at the loss of agricultural biodiversity, proposed a new directive (98/95/EC) in which they envisaged the possibility of cultivating, exchanging and selling varieties in danger of genetic erosion, known as 'conservation varieties', as well as varieties adapted to organic agriculture, and mixtures of species and varieties. These varieties present different characteristics from those meeting the criteria of the catalogue and of UPOV, particularly as regards uniformity and stability. The European Action Plan for biological diversity has confirmed the importance of the existence of legislation in the area of agriculture that is more open to biodiversity (http://europa.eu/scadplus/leg/en/lvb/l28176.htm). In fact this plan, drawn up by the European Commission in 2001 as (in part) the Biodiversity Plan for Agriculture (document COM/2001/0162 final), stresses (§ 79) that 'The conservation and improvement of in situ/on farm plant genetic resources also depends on the effective possibility of sustainable uses and hence on legislation which makes it possible to market diversified genetic materials.' There are still no complete implementing regulations on conservation varieties. A new directive only on agricultural species was proposed in 2008, nine years after the appearance of the term 'conservation variety' (and vegetables and seed mixture are still waiting their specific directive…). This delay highlights the difficulty of reaching a compromise on the question with seed industries. Additionally, on 31 March 2004 the EU ratified the International Treaty on Plant Genetic Resources for Food and Agriculture (www.planttreaty.org), thus opening the debate in Europe on the Farmers' Rights appearing in Article 9.

[2] http://www.ifoam.org/about_ifoam/standards/norms/draft_standards/draft_standards.html

Peasant Organizations and Research

Very recently, peasant networks have emerged to offer an alternative for the future of their 'seeds': in France (the *Réseau Semences Paysannes* – RSP), in Spain (the *Red de Semillas* - RdS) and in Italy (the *Rete Semi Rurali*). Their characteristics and their organizations display some common features:

- they bring together different civil-society actors concerned about cultivated biodiversity (associations, farming unions, institutions etc.);
- they arose in the early years of the Millennium and are displaying rapid expansion, measured by the number of member associations and the number of campaigns carried out (partnership research projects, biodiversity fair, publications, training etc.);
- they have a capacity to communicate with the wide public and to share their concerns;
- their work at national level has been accompanied by a growing awareness of the need to extend the common task to European and international levels (anon. 2005). They accordingly also belong to other civil-society networks.

They differ from a professional farmers' organization in recruiting also people other than peasants themselves and bringing together all citizens who feel concerned about seeds in choosing their food, their clothing materials, their safeguarding of ecosystems, the agricultural landscape etc.

The *Réseau Semences Paysannes* [Peasant Seeds Network] in France was formed in 2003 following the first *Cultivons la biodiversité dans les fermes* [Let us cultivate biodiversity on the farm] Peasant Seeds Meeting, at Auzeville (www.semencespaysannes.org). They bring together associations or organizations and all those who are open to the development of peasant seeds. Thus, the member associations represent both groups of agriculturalists (unions, co-operatives etc.), craft seeds men, other associational or professional structures (natural parks, amateur collectors etc.). The RSP is working to consolidate the activity and development of groups for selecting, conserving and distributing peasant seeds. It plays an important part in encouraging evolution in the law and the exchange of experience and resources at international level, to stimulate and ensure partnerships with public research. It pursues a publication and communication strategy to reach a broader public (publications, bulletin, website).

The *Red de Semillas "Resembrando e Intercambiando"* [Re-sowing and Exchange] (www.redsemillas.info/) is a technical, social and political Spanish organization formed by people in organizations who work to maintain agricultural biodiversity on peasant farms and on consumers' plates. The group has been operational since

1999, but adopted its legal status as an association only in 2005. The wealth of the RdS network lies in the diversity of the people and organizations making it up. Among those participating in the network are peasants and farm organizations, technicians, consumers, local action groups and people linked with universities and research, etc.

The *Rete Semi Rurali* [Rural Seeds Network] in Italy (www.semirurali.net) arose as an informal group of researchers, peasants and agronomists in 2001, and has produced an information bulletin on its members' activities. This network has worked particularly at the level of the regional governments, which for 10 years now have been enacting regional laws to safeguard local agricultural biodiversity (Bocci and Onorati, 2006). The legislative work has produced a text of laws on conservation varieties which was approved by the government in April 2007. In 2007 the informal group took on legal status in the form of an association.

Starting from their initial activities – preserving farm seeds (France) or safeguarding ancient varieties (Italy and Spain) – the networks' aims and activities have broadened. They have opened up to research, and to varietal innovation produced by the peasants themselves. This development is particularly marked in France, where public research has also embarked on the peasant adventure through what is known as participatory plant breeding (PPB), particularly for organic farming. The first projects started in 2001 with specific public funding (Chable and Conseil, 2005; Chable and Kastler, 2006). Starting with five species in 2001, we can now count over 20 species selected both for large-scale cultivation and for gardening (Fig. 1). The peasant networks have become diversified and connected among themselves to exchange experience and the results of experimentation. The number of peasants involved is increasing rapidly, but what is more, after an initial experience the majority of them become interested in several species simultaneously. We can see an evolution of peasant projects with the discovery of species biodiversity, with the characteristics of discovered varieties sometimes inspiring new opportunities for capitalizing on them, or new growing techniques.

The development of the European networks has also been accompanied by collaborative projects involving their own networks but also extending to the Mediterranean area. Their dynamism recently took concrete form through the drawing up of a European Research Project under the Sixth Farm Seed Opportunities (Opportunities for farm seed conservation, breeding and production–www.farmseed.net) Framework Programme, with the participation of European research centres (Table 2).

In the context of this three-year programme, the partners set themselves the

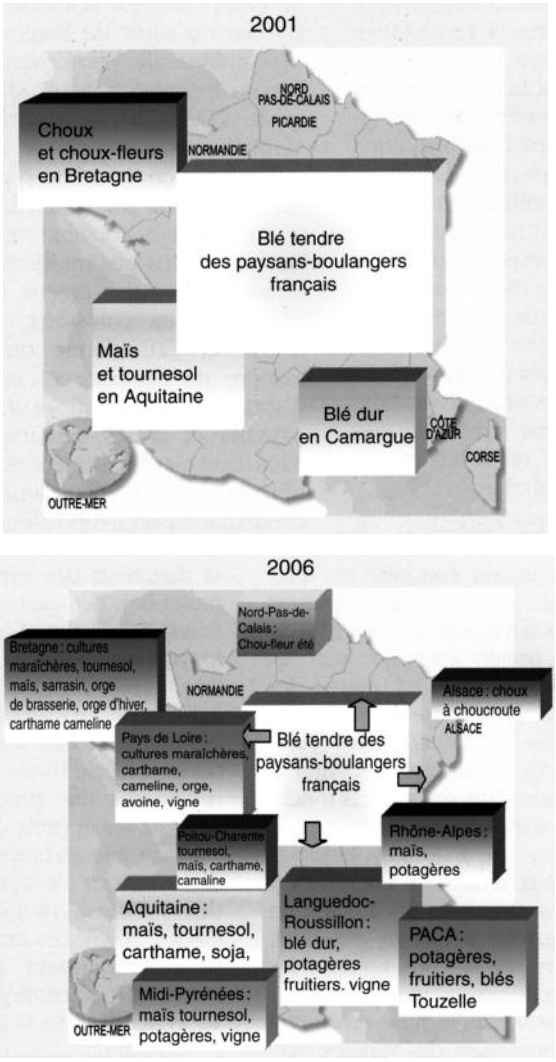

Figure 1 – Plant species involved in participatory plant breeding in France

objectives of supplying the scientific and political community with an account of the marketplaces for the conservation varieties and peasant varieties, defining the

Table 2 - Participants in the EU Farm Seed Opportunities Project

	NAME	ACRONYM	COUNTRY
1	Institut national de la recherche agronomique	Inra	FR
2	Associazione Italiana per l'Agricoltura Biologica	AIAB	IT
3	Louis Bolk Instituut	LBI	NL
4	Red Andaluza De Semillas	RAS	ES
5	Réseau Semences paysannes	RSP	FR
6	Plant Research International	PRI	NL
7	International Institute for Environment and Development	IIED	UK
8	Research Institute of Organic Agriculture	FiBL	CH
9	Inra Transfert	IT	FR
10	Wageningen University	WU	NL
11	Istituto di genetica e sperimentazione agraria Nazareno Strampelli	IGSA	IT
12	Stichting Dienst Landbouwkundig Onderzoek	DLO	NL

positive features and the drawbacks of these varieties through experiments conducted in several countries, and proposing regulatory scenarios that take account of the aspects studied. This project is based on knowledge acquired in the course of SP experience, with the aim of scientifically consolidating the gains from the varied experiments. It will seek to define the peasant variety in fundamental respects over four species (wheat, maize, spinach and haricot beans): capacity for evolution and for adaptation to local *terroirs*. It will seek to determine the positive points and the limits in terms of the current and potential market, particularly by taking into account seed quality aspects.

Participatory breeding applied to the development of peasant varieties represents both capitalizing on the heritage of the peasant communities, and the creation of new varieties. The heritage of the past goes well beyond the context of local varieties, since at bottom PPB can draw on genetic resource (GR) centres throughout the planet. The innovative aspect of this peasant selection is in fact nothing more than a return to a tradition where the selection and production, and also exchange, of seeds belonged to the peasants and was a part of their farming activity. The researcher's role is to accompany the peasant to help him to re-appropriate the seed. Work starts with a search for GRs compatible with OF principles, by controlling the selection techniques for the varieties under experiment used in the past so as to avoid any introduction of biotechnology.

Since peasant knowledge is so often forgotten in the countries of the North, the need is to regain a set of practices compatible with productive activity and good seed quality. Accordingly, the research leaves the laboratory and goes back among the peasants in a spirit of exchange. The researcher's role is also very often to bring together the various peasant experiences with the aim of mutual enrichment (Almekinders and Hardon, 2007).

Peasant knowledge and scientific innovation

These peasant movements in Europe also raise a political question. Affirming their ability to select and maintain varieties, to produce and multiply seeds, is a direct challenge to the prerogatives of the scientific community that has arrogated to itself innovation in agriculture. 'Peasant knowledge' is bringing out a more holistic and local scientific approach based on rigorous observation of natural processes, refusing the contributions of biotechnologies, seen as a factor for destabilizing the adaptive and evolutionary modes of ecological systems (Chable and Berthellot, 2006). Peasant rights and peasant knowledge are thus bringing true scientific innovation in which living things are apprehended in their totality.

Agricultural research is relocalized, passing from a centralized model to a de-centralized, participatory one (Ceccarelli, 1994). In the countries of the South, it is now clear that the Global Plant Breeding system being carried on by several international agricultural research centres in the Consultative Group on International Agricultural Research (CGIAR) is not enough, and above all does not get outside of industrial agriculture; it has generally favoured yield characteristics and the promotion of introduced varieties for as large-scale use as possible, ignoring the diversity of conditions in local agricultural systems (Bellon and Morris, 2002). The system of registering varieties with the VCU criteria also largely guides selections towards varieties that respond to the industrial agriculture of the countries of the North.

It is only fairly recently that scientists have been rediscovering an interest in a holistic vision of the environment where questions of agricultural output have to come together with those of the environment (Altieri, 2004; Banks, 2004; Loreau *et al.*, 2001). In this sense agroecology, still to be regarded as a nascent science, the conceptual basis for organic and peasant agriculture, can renew scientific discourse by moving away from the majority reductionist and analytical approach of agronomic science in general (Altieri, 1995). There is no lack of examples of destabilization of ecological environments by varieties that meet the needs for entry in the official catalogue and are aimed at producing ever-greater yields

according to a few economic criteria. We would point to the ever-faster race between sources of resistance to diseases and the development of new pathogens as a sign of accentuated imbalance in the ecosystem, reinforced by industrial production techniques (COAG, 2007). The regulatory system has accompanied the scientific paradigm of the stable, homogeneous variety, constructed by genetic science, and favouring the concentration of breeders in the seed multinationals, with increasingly huge financial stakes, reducing the peasant's freedom and autonomy in relation to seeds, and reducing available biodiversity (Bonneuil *et al.,* 2006). Peasants and other actors investing in the future of the seeds in the networks have become aware that they are at long last touching upon fundamental values of today's society. This thinking has also extended to the place of the life sciences that are formatting man's relationships with plants. The debate is all the more crucial in countries that still have a large farming population, so as to preserve the cultural and plant heritage that still exists. Elsewhere, as in Europe, peasants have the responsibility for recreating varietal diversity in order to revitalize farming based on *terroir*.

Starting from seeds, we very soon come to understand that in reality what we are dealing with is innovation in rural areas: who produces it, and how? Peasant innovation and even participatory research lead towards a collective system and take on a community dimension. Exchange through the circulation of knowledge and of seeds is the basis for creating innovation (Brush, 2004).

The present arrangements to protect intellectual property do not take account of this process, since they are based on the concept of individual ownership. Within a community (formal or informal) whose bonds are territorial (chiefly in the countries of the South) or ethical (the organic movement in countries of the North), varieties are for all: 'the seed is a gift'. But people are organizing in order together to control the seeds that represent labour that ought to receive its reward within the group.

In the case of peasant varieties, the value system has to be inverted in order to protect and promote innovation: we have to start speaking of collective rights (Onorati, 2005; Salazar *et al.,* 2006) and move from the concept of ownership to that of the recognition of the community and its protection in relation to the outside world. In fact, Farmers' Rights in the FAO Treaty are in course of being established on the basis of these ideas (Andersen, 2006).

Conclusion

Are all the debates over seeds in Europe going to become a source of ideas

for the countries of the South, more especially Africa? Conversely, can all the studies and methodologies on the seed saving systems of peasants of the South similarly be transferred to the North?

French, and still more Italian, organic and/or peasant farming has common features with the farming systems of the South (great agroecological and socioeconomic variability, small-sized farms with a diversity of species, no chemical inputs, multi-use crops, preference for a local economy). The debates in the North are now offering a variety of models of 'seed systems', ensuring an adjustment between the cultural and social characteristics of a peasant community and its agricultural techniques. The time has come for extending the debate by promoting the exchange of knowledge and know-how between peasants of the North and of the South, to preserve agrobiodiversity and promote innovation in rural areas. The stakes are all the greater as regards information between peasant communities in the case of West Africa, itself in the course of developing a seed policy, whose choices to date seem limited to only the UPOV or patent systems (Tripp *et al.*, 2007). Extending the debate among scientists, peasants from North and South and the seed industries is fundamental to placing the emphasis on the legitimacy of a plurality of approaches.

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