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Food sovereignty and safeguarding food security for everyone:

Issues for scientific investigation

Hugh Lacey















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Introduction:

Claims and presuppositions associated with food sovereignty

In this paper, I will consider food sovereignty [FS] as an aspiration, or value, held by various social movements (first and most notably La Via Campesina [LVC]) and food producing communities, (i) to control or determine the shape of all aspects of their food system; (ii) to produce sufficient and healthy food in culturally appropriate and ecologically sustainable ways, normally in and near their locales; (iii) to utilize and develop agroecological approaches to production; (iv) to protect farmers' right to seed, land, water and fair markets, and their communities, livelihoods and social and environmental sustainability; and (v) for the development of regional, national and international policies that would democratize the administration of food systems and further the realization of (i)–(iv).¹

It has been claimed:

[A] The policies, programs and practices of FS hold the key to an alternative food system that unlike the current one – could, over the long term, implement and safeguard the right to food security for everyone.

[A] presupposes:

[B] A food system could be implemented, with a multiplicity of complementary locally-specific, locally-chosen, locally-directed approaches to food production at its core, that (with the approaches appropriately combined) would simultaneously be:

- highly productive of nutritious foodstuffs, environmentally sustainable and protective of biodiversity
- more in tune with (and strengthening of) communities of rural people and the variations of their values and interests with place and culture

¹ Noting that FS is open to contested and evolving interpretations (Wittman, et al., 2010b), my formulation is intended to be provisional and open to modification. Its wording borrows from the Conference Homepage definition of FS, and from Holt-Giménez & Shattuck (2009), Perfecto et al. (2009), Desmarais & Wittman (#3, this conference), and Rosset & Martinez-Torres, (#4, including the passages cited from LVC, 2013, and the Nyéléni Declaration. 2007). The Homepage definition (among others) refers to FS as a right (also "as a political project and campaign, an alternative, a social movement, and an analytical framework"). Issues about FS as a right are skew to the aims of this paper.

- applicable in contexts (e.g., small farms in impoverished regions) where industrial farming has little applicability, and so particularly well suited to contribute to food security by ensuring that rural populations are well fed and nourished, and able to resist the further consolidation of current patterns of hunger
- when accompanied by appropriate locally-oriented distribution methods, able to play the major role in producing the food necessary to feed and nourish the world's growing population.

FS and (what kind of) scientific research

My aim is to explore what kinds of scientific research – using what methodologies and building on what experiences (and of whom) – could contribute constructively, *first*, to appraising the potential for the development and expansion of the programs and practices of FS, and whether it is significant enough to inspire confidence in [A]; and, *second*, to producing knowledge that could inform the multiplicity of FS approaches referred to in [B].

One might wonder whether my aim is consistent with holding the aspiration to FS; and, on widely taken-for-granted understandings of 'scientific research', it would not be. According to my argument, however, how 'science' is to be understood is a matter of contestation. In particular, it is not inherent to 'scientific' research that it be conducted in laboratories and institutions, in which producing knowledge is thought of as an activity distinct and separate from the practices in which it may be 'applied', and in which knowledge is produced that credentialed scientific experts then convey to farmers telling them how their farming practices may be improved. Scientific research is often conducted in this way, perhaps always so when the aim of research is said to be to produce technoscientific innovations that serve interests of capital and the market (and, in this context, of agribusiness) (Lacey, 2012c). Agrotoxics and transgenics are among the products of this kind of science. Its methodologies are designed to investigate the underlying molecular structures of phenomena and objects (e.g., seeds), their physicochemical mechanisms, laws expressing relations among quantities, and how control may be exercised and intensified by means of technical interventions - dissociating from the contexts of the origins of the phenomena, and their uses and places in the world of lived and practical experience. I call science that only uses such methodologies decontextualized science (Lacey, 2008; forthcoming-1). It includes the disciplines, e.g., molecular biology and biotechnology, that inform high-input agriculture (using transgenics, agrotoxics, etc), and it is indispensable for the development of today's dominant food system - structured by marketoriented, industrial programs of food production and distribution, and dominated by international agribusiness corporations – whose unfolding and intensification progressively leaves diminished space for the practices of FS.

The methodologies of decontextualized science, however, do not suffice to produce understanding of objects that are inseparable from their contexts: e.g., sustainable agroecosystems and their possibilities, and the ecological, human and social contexts, consequences and risks of the commercial uses of transgenics (and other technoscientific innovations derived from research in decontextualized science) – as well as other phenomena, where social structures, ecological and historical context, and impact on and contributions from human beings, are fundamental. In the mainstream, science often tends to be identified with decontextualized science (Lacey, 2005; 2008; forthcoming-1). Then, since objects that are essentially contextualized (e.g., agroecosystems) cannot be investigated as such in it, no 'scientific' evidence could be obtained that successful practices based on knowledge of them are possible (or, indeed, impossible), and important dimensions of the practices and programs of FS would remain uninformed by 'scientific' knowledge.

Science as systematic empirical inquiry

Science should not be identified with decontextualized science (Lacey, 2008; 2012a; forthcoming-a; forthcoming-b). Scientific research can (and should) be thought of as systematic empirical inquiry conducted using whatever methodologies and experiences are apt for gaining knowledge and understanding of the kinds of phenomena and objects being investigated and their full causal networks, and in which all claims are subject to the test of evidence obtained from relying on the appropriate methodologies and experiences. This incorporates decontextualized science. E.g., decontextualized methodologies of molecular biology, genetics and biotechnology are apt for investigating the possibilities of transgenics. But, as will be elaborated below, other kinds of methodologies are also needed to investigate the consequences of using transgenics in the world of lived and practical experience, the causes of widespread hunger, and (e.g.) the possibilities of the practices and programs of agroecology. To explore 'how can science contribute to FS?' requires interaction with the agents of FS, contact with the salient phenomena for FS and (farming) experiences of its practitioners, openness to learning unfamiliar idioms and possibilities that may be expressed using them, awareness (and acceptance) of cultural differences, recognition that objects such as seeds are objects simultaneously of many kinds whose possibilities cannot be grasped within a single framework, and ability to dialogue across differences. There can be an important role for

professionally trained scientists in the programs and practices of FS, but science does not contribute to FS under the authoritative direction of 'scientific experts'. Rather, 'how can science contribute to FS?' is reciprocally intertwined with 'how can its encounter with FS enrich

the ways in which science is conceived and conducted?'. This is to locate science within the diálogo de saberes (Rosset & Martinez-Torres, #4). Science cannot remain unaffected by the encounter with FS. Otherwise it will lack the methodologies needed to investigate the phenomena that are salient for FS, and it will not be able to draw on the experiences needed to provide evidence for claims about the possibilities of FS. Thus, it will fall short of its traditionally proclaimed goal of 'understanding the world we live in'. Defending and strengthening FS and enriching the ways in which science is conceived and conducted go hand in hand. If science were to be re-institutionalized in recognition of this reciprocity, and a 'new research agenda' (Altieri, 2010, p. 131) established, that would weaken the ideological role of appeal to science (decontextualized science) in supporting the legitimacy of the dominant food system.²

FS and food security

Detailed programmatic and practical proposals usually constitute the bulk of the position papers put out by proponents of FS (Via Campesina–Brasil, 2008; appendices in Wittman *et al.*, 2010a; and summary statement in Rosset, 2009). The aspiration to FS is concretely fleshed out in these proposals, and so they should be a point of reference for interpreting items (i)–(v) in the opening paragraph of this paper. Food security has high salience in them.³ For many of the people and communities (organized within LVC), with whom the aspiration to FS originated, their own food security is precarious, and their own means of producing food are being progressively undermined within the currently dominant food system. The aspiration of FS is, in significant part, for the sake of claiming the right to food security for themselves and others similarly situated.

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² According to the more encompassing definition of science, *scientific* knowledge is not limited to knowledge established in decontextualized science or in certified scientific institutions. Then, items of traditional knowledge that are soundly supported by empirical evidence (regardless of the idiom in which they may be expressed and how 'contextual' or 'metaphorical' it may be) may be classified as 'scientific', *without denying their specific features and distinct origins, and forcing them into a mold that supposedly fits all scientific research*. I have classified them in this way in Lacey (2012b), because I want (1) to point out that the epistemic credentials of such items can be on a par with those of claims certified as knowledge in mainstream scientific institutions, (2) to endorse methodological pluralism, (3) to challenge the exclusivity of the conception of science as decontextualized science and the ideological uses to which it is sometimes put, and (4) to emphasize the reciprocity just mentioned in the text. Others, with different objectives to mine, prefer to contrast the 'saberes' of the 'diálogo de saberes' to 'science', or to speak of 'other knowledges', or 'decolonialized knowledges' (Pimbert, 2009; Santos, 2004).

³ EAO refers to food socurity as 's cituation that exists when all people, at all times, have physical, escial and

³ FAO refers to food security as 'a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' (FAO, *The State of Food Insecurity, 2002*, quoted in IAASTD, 2009).

The right to food security

The legitimacy of aspiring to achieve and safeguard food security can hardly be questioned. Article 11 of *International Covenant on Economic, Social and Cultural Rights* [ICESCR] recognizes "the fundamental right of everyone to be free from hunger"; and State signatories to ICESCR assume the legal responsibility to implement specific and *effective* programs⁴ to ensure the realization of this right progressively and as rapidly as possible for citizens, who currently are not its beneficiaries.

Identifying effective programs is not a matter of guesswork, of aggressive affirmation, of having good intentions, of 'believing' that the only realistic efforts to solve problems like food insecurity (and other problems of the poor) must involve technoscientific innovations, or of what serves (or is permitted by) prevailing economic, corporate, political, ethical, religious, cultural, class or personal interests. Potential effectiveness needs to be tested in the light of relevant empirical evidence. Moreover, evidence that the dominant food system is increasing production at a rate greater than population increase would not amount to evidence that food insecurity is being diminished. Issues about the conditions of production and distribution, and how the product is used (food for people, food for animals, agrofuels), have to be taken into account. Relevant evidence would have to be obtained in scientific (systematic empirical) inquiry that addresses, among other things, the causes of prevailing food insecurity (not precluding that they may derive from the mechanisms of the dominant food system), and how a program's likely effectiveness compares with the potential effectiveness that competing programs might have if further resources were put into their development and refinement. Decontextualized science does not have the methodological resources for obtaining such evidence and, therefore, for appraising either the claim (often an integral part of the legitimating discourse of the dominant food system) that there are no viable, non-marginal possibilities outside of this system, or its contrary, [A].

FS and the right to food security

Many States have facilitated the entrenchment of the dominant food system, but not fulfilled their legal responsibilities as signatories to ICESCR. Large numbers of people in many countries, who continue to suffer from hunger, malnutrition and their consequences, are not beneficiaries of the right to food security. Furthermore, evidence is accumulating that it is because of mechanisms present in market-oriented, industrial programs of food production and

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⁴ Including specific programs that aim: "(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources; (b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need".

distribution, which shape the current food system, that food security cannot be ensured for many people, those, e.g., who are especially vulnerable to market variations and the shortages of food that can be caused by market-based decisions (e.g., to grow crops for agrofuels rather than foodstuffs).⁵ These mechanisms lead to environmental and social devastation (see Bernstein, #1), to displacing many people from their lands (and thus from being able to produce their own food, thus making their access to food a function of their capacity to buy it), to eliminating progressively the conditions for practicing alternative forms of farming (like those espoused by movements for FS), and thus to occasioning the loss of the time-tested knowledge that has informed these practices, as well as of culturally valued ways of life.⁶ Although this kind of diagnosis of the causes of continuing food insecurity (and actual hunger) in many countries is hotly contested by agribusiness corporations, scientists who identify science with decontextualized science, and many governments, it is gaining wider currency, and so is the claim that there is little prospect of food security being dealt with adequately within a single dominant system that is focused first on profits, and not on the rights and well being of everyone. If this is so (and I think that it is) then, in order for the right to food security to be recognized, the current food system needs to be replaced.

There is disagreement about what form an appropriate replacement system should take; and, in the long run, only the test of practice can settle whether a system enables the full realization of the right to food security. For some, the replacement system would involve modifying the prevailing system by introducing complementary mechanisms to address current areas of failure. Tertainly, at least as a short term strategy, this has much to commend it. Even so, LVC's

⁵ Hunger does exist in parts of the world into which the dominant food system has little penetrated. The analysis here could be extended to argue that the programs of FS (in the light of $[A_1]$ below) offer more promise for them than introduction of the dominant system with its mechanisms. (To discuss this is beyond the scope of this paper.)

⁶ I have no space to document the (alleged?) evidence for these claims here (I assume that those attending this conference are familiar with it) – and also for the claim that the same mechanisms are integral to the intertwined crises of food, energy, climate and violence that we are currently facing (Lacey & Lacey, 2010). If this evidence is not found compelling, then any appeal that the aspiration of FS has would be weakened.

When I emphasize that evidence is fundamental (to avoid being in the grip of ideological commitments), I do not imply that uncertainties can be avoided on lots of relevant matters. Judgments about how strong evidence should be in order to legitimate acting informed by a claim, given uncertainty about it that evidence cannot eliminate, are inevitably intertwined with value judgments (Lacey, forthcoming-2). [Bernstein (#1, p.2) points out that it is a 'demanding task' to assess evidence 'in areas in which different perspectives clash'.]

⁷ Cf. "Food security strategies require a combination of AKST [Agricultural Knowledge, Science and Technology] approaches, including the development of food stock management, effective market intelligence and early warning, monitoring, and distribution systems. Production measures create the conditions for food security, but they need to be looked at in conjunction with people's access to food (through their own production, exchange and public entitlements) and their ability to absorb nutrients consumed (through adequate access to water and sanitation, adequate nutrition and nutritional information) in order to fully achieve food security" (IAASTD, 2009 p. 5).

analysis suggests that, while the mechanisms described in the previous paragraph remain in place, it is likely that any complementary mechanisms would be weakened with the passing of time. For LVC, the dominant food system should be *resisted*, not *simply modified*, and replaced by a fundamentally different system based on the programs and practices of FS. LVC's proposal is informed by the claim [A] (see Introduction), that policies, programs and practices of FS hold the key – minimally as the core and not just as complementary mechanisms – to an alternative food system that could implement and safeguard the right to food security for everyone.

Holding FS as a value or aspiration is inseparable from its connection with food security. Vindicating the far-reaching claim, [A], that the programs of FS, unlike those of the reigning food system, can contribute *generally* to safeguarding food security would certainly suffice to justify aspiring to it, and to justify that they merit receiving significant, even priority, public material/technical/financial support. But vindicating [A] is not necessary to justify holding FS as an aspiration. The practices of FS have provided, *for a growing number of their practitioners* (members of organizations like LVC), the means to have the right to food security realized and safeguarded. This is illustrated in the many actual successes of agroecology in many environments throughout the world (see Rosset & Martinez-Torres, #4; Altieri, 1995, 2010; Vandermeer, 2011). These successes demonstrate that there are contexts, in which the right to food security is not well served by the reigning food system, but in which the practices of FS *actually have* enhanced food security. They provide compelling evidence for the claim [A₁] that is less far-reaching than [A], but by itself sufficient to justify adopting the aspiration of FS, and attempting to develop and implement its programs and practices wherever they promise to be effective.

 $[A_1]$ The potential of FS to provide the means for remediating food insecurity may be developed and expanded more extensively than it has been to date – *perhaps* for some groups in some contexts, but not for others (e.g., large urban populations) – *how extensively* remains open at present, to be settled by the accumulating tests of practice and empirical inquiry.

FS and the more encompassing set of values in which it is enmeshed

Achieving food security is indispensable, but the value of FS does not derive simply from means-ends considerations. FS is enmeshed in a more encompassing set of values. Among other things, according to LVC, its practices 'teach respect for Mother Earth'; they are more sustainable (demonstrably better for Mother Earth); they depend on the intelligent initiatives of farmers themselves, their knowledge, perceptiveness, capacity to learn, to cooperate and to make their own judgments and decisions; they require 'recovering our ancestral farming

knowledge and appropriating elements of agroecology (which in fact is largely derived from our accumulated knowledge)' and in other ways strengthen their cultural and traditional heritages; they are part of the solution to global warming; they guarantee 'a life with dignity for ourselves and future generations of rural peoples', and offer 'solutions to the food, climate, and other crises of capitalism that confront humanity' (Rosset & Martinez-Torres, #4).

Values of social justice, sustainability, popular participation and universal human well-being

The more encompassing set contains (what I call) the values of social justice, sustainability, popular participation and universal human well-being ($V_{SJ\&S...}$), values that are pertinent to enhancing agency, community, culture and sustainability that together are integral to the quest for social justice. I take $V_{SJ\&S...}$ to include:⁸

- solidarity in balance with individual autonomy
- social goods ranked above private property and profits
- the well being of all persons ranked above the market
- strengthening a plurality of values (reflective of different, including indigenous, cultures) in place of commodification
- human emancipation in balance with individual liberty and economic efficiency
- respect for all people as intelligent agents, active participants in deliberations and decisions that shape the agendas and framework of their lives, not to be subordinated to the ends of the powerful or to the 'necessities' of institutions or nations
- rights of the marginalized and equity within and between generations ranked above interests of corporations and the privileged
- taking responsibility for one's community and its future instead of resignation in face of the projects of the powerful
- proper balance of civil/political and social/economic/cultural rights
- democracy not limited to formal democracy, and enriched with participatory mechanisms so that there is inclusive democratic decision-making about such matters as the production and distribution of goods (manufactured and agricultural) and services, and how to balance institutionally social/economic/cultural rights with civil/political rights.
- environmental sustainability (including preservation of biodiversity)
- human stances towards nature respect, preserve/restore, attune to, sustain, cultivate, contemplate, enjoy, love (Mother Earth), mutual enhancement that (unlike unqualified

⁸ This list represents my interpretation of the values desired to be embodied in the 'other world' that the World Social Forum affirms to be 'possible'. It is based on numerous documents of the Forum and popular organizations that fall under its umbrella, including organizations influence by the theology of liberation. Its items would be fleshed out by the various organizations of the Forum using different kinds of languages (like in the quotations from LVC in the previous paragraph) and sometimes with different emphases.

control or domination) protect environmental sustainability, preserve biodiversity and ensure that the regenerative powers of nature are not further undermined, and restored wherever possible.

Agency

I draw special attention to agency (cf. Lacey, 2013), because the 'sovereignty' of farmers, their communities and movements, and the enhanced agency required to claim and exercise it, are at the heart of the aspiration to FS. Exercising agency is integral to human well-being. Human beings are agents, beings with capacities for self-consciousness, self-reflection and self-determination, and for acting according to their own reflectively endorsed values (and the goals and ideals they inform) and their own intelligent assessments of current realities. Agency is the distinctive human capacity shared by all human beings. For its effective exercise, however, certain conditions are required. It can be enhanced – or diminished – by people's relations with others and their places in social institutions, and by the relations they are able to maintain with the natural/biological/ecological environment.

Effective agency (especially when we consider future generations) is intertwined with environmental sustainability; and effective agency and relations of solidarity mutually reinforce one another, so that agency is enhanced in vital communities. It is diminished where institutions of capital and the market structure a society so that many people are excluded from roles in decision-making and from having secure access to the conditions needed to maintain well-being. Diminished agency is linked with the sense of being powerless and helpless, subject to the pushes and pulls of forces outside of one's control and often understanding, where one's own perceptiveness, values and agency can play little role in the unfolding of one's life and habitat. Diminished agency is, not only one of the sufferings experienced by poor and marginalized people, but also causally linked with most other sufferings (material, social, psychological, cultural, spiritual) that they experience. Hence the importance for people, marginalized within current social structures, of enhancing their agency through their own leading participation in the communal practices and popular movements aiming to redress the sufferings they are experiencing and to assert their leading role in determining the conditions that shape their lives. V_{SJ&S...} are incompatible with the values that are embodied in the institutions of capital and the market, and that are widely held throughout the world today and embodied in the dominant food system.

FS: the connection between food security and holding $V_{SJ\&S...}$

The dominant food system is to be resisted because its mechanisms simultaneously cannot lead to safeguarding food security for everyone *and* they are incompatible with the significant

embodiment of $V_{SJ\&S...}$ In contrast, at the same time that they aim to safeguard food security, the programs and practices of FS (where they are successfully established) both express and contribute to the further embodiment of $V_{SJ\&S...}$. This is of fundamental importance. It is in large part *because* the programs and practices of FS both express and contribute to the further embodiment of $V_{SJ\&S...}$ that they plausibly can be entertained as opening a path that might lead beyond their *current successes* towards *generally* safeguarding food security.

The prospects of achieving food security cannot be reduced to a technical issue that can be satisfactorily dealt with in decontextualized science. Nevertheless, they remain open to empirical inquiry. To assess the prospects of achieving food security generally within the dominant food system would require inquiry that takes into account the socio-economic mechanisms of the system and the values it embodies, its history, and the stance of domination of nature that it incorporates. (See Note 6). The size of crop yields may be increasing within the dominant system, but that by itself would not be an indicator of enhanced food security. In any case, at the present time, evidence is pretty murky about what food system is likely to most increase crop yields. Evidence, described in some metastudies, that in some environments (acre for acre) crop yields from agroecological (and other forms of organic) farming are at least comparable to (and sometimes greater than) those of conventional and transgenics-oriented farming (Badgley *at al.*, 2007), is difficult to reconcile with apparently counter evidence described in others (Seufert *et al.*, 2012).

Also open to empirical inquiry are the prospects for expanding food security by way of the programs and practices of FS (and, in particular, of agroecology), and whether there is evidence to support only $[A_1]$, with the limits of effective expansion becoming identified, or also to identify the socioeconomic conditions that would have to be established in order to take the step to [A]. It may be that conditions (e.g., labor intensiveness) needed for agroecological farming (and other practices of FS), and the distribution of its products (e.g., markets), cannot be reproduced on the large scale that would be needed to supply sufficient food for large cities. This cannot be settled definitively now. Be that as it may. Uncertainty about this (or being highly skeptical about it) does not provide a reason to refrain from exploring the potential of agroecology to expand, to develop new methods and modes of organization for its practices, and to be deployed in new contexts (including urban ones) with new participants.

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⁹ Seufert *et al.* (2012) write: "To establish organic agriculture as an important tool in sustainable food production, the factors limiting organic yields need to be more fully understood, alongside assessments of the many social, environmental and economic benefits of organic farming systems." Altieri (2010) writes: "Productivity [of traditional systems] may be low, but the cause seems to be social, not technical".

It doesn't need to be settled definitively now whether or not the programs and practices of FS can contribute *generally* to safeguarding food security (i.e., whether or not [A] is vindicated). Expanding the range of successes of agroecology now is worthwhile (and contributes to safeguarding food security for more people) even if there are limits to its potential expansion – cf.: ".. agroecology [is] a mode of agricultural development which not only shows strong conceptual connections with the right to food, but has proven results for fast progress in the concretization of this human right for many vulnerable groups in various countries and environments" (De Schutter, 2010). Expanding the programs and practices of FS is a process. No one thinks that they can safeguard the food security of everyone without developments that would require time, resources and preparation of farmlands, new public policies, and the formation of practitioners. Replacing the dominant system, as it were, 'tomorrow', is not at issue. 10 Meanwhile, the potential of FS programs can be explored, giving priority to developing them in the places where the right to food security currently is not safeguarded. The potential of FS to expand bit by bit ([A₁]) can be tested in the process. Thus, something important is gained and nothing important is lost (except that the interests of beneficiaries of the dominant food system would be somewhat thwarted). If insuperable limits to the expansion of FS are found, so be it; it's still valuable to engage in the programs and practices of FS wherever they work and people want to follow them.

Methodologies used in exploring possible limits of [A₁] need to be able to take into account the dual motivations - safeguarding food security and furthering the embodiment of V_{SI&S...}. The movements for FS will grow only if farmers (and others) are motivated to join them. Strong motivation is required, for the obstacles to developing FS programs and practices are great, and cannot be overcome simply by receiving better technical advice about how to use the latest innovations. Sometimes the obstacles appear to be overwhelming: the seemingly unstoppable push (strengthened by national and international policies) of agribusiness and industrial farming that would claim all arable land for their practices; feeding large populations; issues about markets and trade; people caught up by the lure of advertising and the image of the 'good life' that it conveys, or becoming resigned to the conviction that outside of the dominant system they cannot take care of the needs of their families; costs and other barriers to the transition to agroecology; difficulties of access to the required kinds of seeds and loss of the knowledge to manage sustainable agroecosystems. Holding V_{SJ&S...}is the key source of motivation to resist and hope to take a different path; and the unleashing of agency imagination, intelligence, perceptiveness and the possibilities that are opened by effective solidarity – that comes with it can generate the capacity to confront the obstacles, to seek for

¹⁰ The proponents of FS do not propose to engage in an experiment on a world scale with no controls and no cautionary measures in place, as some proponents of using transgenics do.

new solutions to the problems confronted, to be open to recognize new roles for participants, to gain new adherents, and to effectively push claims for obtaining public support. ¹¹

The causal role of hope

Successfully expanding the programs and practices of FS itself generates the hope of further novel possibilities and the conditions for them emerging. Committed action/organization aiming towards generalizing the scope of applicability of FS itself creates conditions for further expansion and attracting new adherents that could not have been foreseen beforehand. Hope, expressed in commitment and solidarity, can have causal consequences. Hope does not guarantee certainty of success, or evidentially support the genuine possibility of success – it is not a substitute for evidence; but, without it, expanding the programs and practices of FS so that they can contribute generally to safeguarding food security is not a possibility.

The refrain 'no other possibilities' is repeated often enough, i.e., that there are no non marginal possibilities of meeting the food needs of everyone except within the dominant food system – and the authority of science is often claimed to support this refrain, although (see Introduction) decontextualized science lacks the competence to appraise it. Yet, if science is to be able to gain understanding of 'the world we live in', it must deal with all the causal factors operating in this world – and hope is one of them. So, investigation of 'no other possibilities' needs to consider the causal consequences of the hope that I have pointed to. Such investigation supports [A₁], that programs of FS can contribute to meeting the food needs of a larger body of people. It does not settle, however, whether or not they can be expanded to meet the food needs of everyone ([A]); but this could not be settled antecedently to engaging in the practices of FS and empirically monitoring their outcomes locale by locale and finding out what their limits (if there are any significant ones) may be.

Nevertheless, it is difficult to resist 'no other possibilities'. To question it is to risk being labelled 'non scientific', or even 'against science', ¹³ and accused of failing to face the 'realities' of the

¹¹ Issues about pedagogy (Rosset & Martinez-Torres, #4) and an alternative legal framework (Kloppenburg, 2010) are also important in this context.

¹² Cf.: "La Via Campesina incorporates large numbers of peasant families in self-organized processes that can dramatically increase the rate of innovation and the spread and adoption of innovations, and has made possible the scaling-out (broad adoption over wide areas and by many farmers) and scaling-up (institutionalizing supportive policies for alternatives) successful experiences" (Rosset & Martinez-Torres, #4, p. 10).

¹³ Where science is identified as decontextualized science, the context-sensitive methodologies of, e.g., agroecological research are not considered 'scientific'. The rhetoric of legitimation of using transgenics often makes use of exasperated laments that opponents of transgenics refuse to accept what has been established by science. 'Golden Rice', by Amy Harmon, in today's *New York Times* (August 25, 2013),

contemporary world: that there are no viable long-term possibilities outside of the trajectory of capital and the market; that the vast majority of people hold the values of capital and the market and associated individualist values (and desire only to strengthen the expression of them in their lives); and that interests associated with capital and the market will tolerate no competitors and use their power to destroy or marginalize them. Hope has to be gained and remain unstifled in the face of these intimidating factors (as well as the obstacles already mentioned) – the hope that it is not a *fait accompli* that industrialized, market-oriented agriculture will remain dominant, and that FS is not just a relic of the past and inadequate to contemporary conditions, that it has the capacity to grow and expand in ways appropriate to our times. The proponents of FS see themselves as confronting the choice: *either* to be resigned to a life marked by food insecurity and not shaped by rural agents' authentic values (V_{SJ&S...}), or to engage in the struggle for FS. Holding V_{SJ&S...} does not guarantee that the practices of FS can result in abolishing food insecurity for everyone, but it can nourish the hope (and the committed action that it engenders) that is a key causal factor in expanding the applicability of FS.

Scientific research: V_{SJ&S...} and the aspiration of FS

At the outset, I asked: what kinds of scientific research – using what methodologies and building on what experiences (and of whom) – can contribute constructively, *first*, to appraising the potential for the development and expansion of the programs and practices of FS, and whether there is evidence that its potential is sufficient to underlie confidence in [A]; and, *second*, to producing knowledge that can inform the multiplicity of FS approaches referred to in [B]? These questions are specific instances of a more general question that I have considered at length elsewhere (Lacey, 2008; 2012a; forthcoming-a; forthcoming-b): "How should scientific research be conducted, by whom and with the participation of whom, with what priorities and using what kinds of methodologies, and how should technologies be developed and administered, so as to contribute effectively to bringing about the conditions for the more adequate embodiment in contemporary societies of V_{SJ&S...}?" ¹⁵

< http://www.nytimes.com/2013/08/25/sunday-review/golden-rice-lifesaver.html?ref=opinion>, contains the latest instances.

¹⁴ This is why FS matters for all of us, and why I think that we should be in solidarity with the movements for FS. We should not have illusions, and we should not submit to ideologically based pressures. Equally, we (e.g., academics/scientists) should put full efforts into making it possible for FS to grow. Could it be that solidarity with the movements for FS is the source of a new way of living for everyone?

¹⁵ Versions of this question have been discussed in the World Forum of Science and Democracy, which (since 2009) has met together with the World Social Forum. I note in passing my impression that in the World Social Forum there has been plenty of critical discussion of the harms caused by and risks occasioned by actual and anticipated technoscientific innovations (e.g., transgenics, nanotechnology, geothermal technologies) introduced by

Inquiry, aiming to address these questions adequately, cannot be restricted to using *only* decontextualized methodologies; it must draw upon the more encompassing conception of science and its methodologies – *systematic empirical inquiry with methodologies tailored to the characteristics of the object of inquiry* – formulated in the Introduction. I have already discussed this in connected with the first question. I now turn to the second one about what kinds of scientific research can produce knowledge that can constructively inform the multiplicity of FS approaches (particularly agroecology) referred to in [B].

Agroecology

The term 'agroecology' is used to designate both a type of farming and a scientific field that generates knowledge to inform agroecological practices. ¹⁶ As practice, agroecology aims to attain a balance for each agroecosystem (determined by local communities) among dimensions such as: productivity, sustainability and protection of biodiversity, health of members of the farming communities and their surroundings, and strengthening of local people's culture and agency (based on Altieri, 1995). Its origins lie in traditional farming practices and it remains in continuity with them. E.g., seeds used in agroecology (unlike in conventional and transgenic farming) remain being both 'foodstuff and means of production' (Kloppenburg, 2010). Crop plants, grown from seeds selected in traditional ways (and contemporary refinements of them), tend to be integral parts of sustainable agroecosystems that generate products that meet local needs, and cultivating them is compatible with local cultural values and social organization. The seeds planted are selected from crops harvested by the farmers themselves, with procedures time-tested to nurture biodiversity and to introduce new varieties that are suitable to grow in unfavorable (e.g., excessively dry, mineral deficient, nitrogen depleted, waterlogged, polluted with agrotoxics' residue), new and/or changing environments. ¹⁷ Sometimes the effectiveness of

institutions of capital and the market, and of the importance of the Precautionary Principle. This discussion is urgently needed. But it has not been accompanied by much positive discussion of science and the non-decontextualized forms that it can take – and of how science (appropriately understood, pursued and institutionalized) can be an ally of the popular organizations.

¹⁶ Rosset & Martinez-Torres (#4) refer to agroecology also as a movement.

¹⁷ Transgenics allegedly can be developed to grow in unfavorable and degraded environments, although (so far as I know) none have been introduced in practice. Usually they are grown in environments that have been made suitable for growing them by using industrial inputs (fertilizers, herbicides, etc). Developing transgenics, however, presupposes the prior existence of seeds that have been selected by traditional methods (it is the genomes of these or their descendants that are altered). [The decontextualized science that informs the development of transgenics lacks the conceptual and theoretical resources to be able to understand the origins of what it presupposes.] But – since they are normally grown in monocultures; since the industrial inputs eliminate a great variety of organisms; and since, as they occupy more farm land, the use of traditional selection methods is progressively diminished, and with it the knowledge that underlies their use is progressively lost – the development and use of transgenics threatens the maintenance of the biodiversity of crops and organisms in

selection methods is improved by techniques developed in the course of farmer-scientist collaboration, e.g., 'participatory breeding' of crop plants that has enabled drought-resistant varieties of maize to be developed using traditional methods of selection, aided by techniques of genomic analysis (Machado & Fernandes, 2001).

Agroecology, as science (systematic empirical inquiry), investigates the agroecosystems in which agricultural production and the distribution of its products take place, and the possibilities they engender. It is essentially an inter- and multi-disciplinary field of investigation, and so its methodologies - which need to be apt to investigate (among other things) seeds as constituents of agroecosystems and as objects of value that may have economic, legal cultural, aesthetic, cosmological or religious significance – cannot be limited to decontextualized ones. As is clear in comprehensive scientific expositions of agroecology (e.g., Altieri, 1995; Vandermeer, 2011), it draws on mainstream biological, chemical and soil sciences, and also on (at least) ecology, sociology, psychology, economics, public health sciences, and political science - as well as on indigenous and traditional local knowledge (that has met the 'test of time') and traditional practices, with which it often manifests continuity (Vandermeer, 2011, pp. 327-330). The methodologies of agroecology are apt for dealing with agroecosystems, whose components include underlying objects: minerals and microorganisms in soils; genetic, physiological and anatomical structures of plants, causes of diseases of plants and animals; objects of familiar experience: seeds, soils, plants, animals, insects, human beings, sources of water, buildings, division of agricultural fields; and more or less self-regulating totalities: systems, ecosystems, social/economic/cultural systems.

Its results are represented in 'theories', i.e., organized bodies of knowledge, explanations and encapsulations of possibilities (Lacey, 2005, Ch. 10; 2006, ch. 5). 'Theories' *include*, in the first place, generalizations referring to (a) the tendencies, functioning, and possibilities of agroecosystems, their components and relations among them — taking into account such matters as rotation and diversification of crops, integrated pest management, plantings of polycultures with different varieties and species in appropriate designs, green manures, nutrient cycling, natural fertilizers from locally accessible sources, etc, as well as established results is disciplines such as soil chemistry, plant physiology and ecology (Altieri, 1995; Vandermeer,

agricultural environments, and thus undermines the conditions for the continued development and understanding of what they presuppose. This undermining is intensified by the use of intellectual property rights to entrench the breaking of the unity of seed as foodstuff and means of production, and with it the control of local farmers over the production and use of their crops. Transgenics, developed and used in this way, can have no place in the programs and practices of FS. (See Kloppenburg, 1988 and Shiva, 1991, for more detailed analysis and argument.)

2011);¹⁸ (b) methods for reclaiming degraded lands; and (c) the conditions that make preservation of biodiversity more likely (Perfecto, *et al.*, 2009). Secondly, 'theories' incorporate 'local profiles' and historical narratives (that vary with cultural, geographic, economic, ecological and other conditions) that serve as the basis for defining the balance desired by local communities of the various dimensions of agroecosystems.

In order to procure the kind of empirical data that is relevant for generating and testing such 'theories', the collaboration of agroecological researchers and farmers who work the agroecosystems is essential. Farmers, with their experience, their practical and observational skills and improvisational experimental attitudes, typically have a more complete grasp (than formally trained scientists could have) of the agroecosystems in which they work, the variety of their organic and inorganic components, their spatiotemporal variations and histories, and also of the practices that can be sustained and that maintain biodiversity in them. Moreover, since they are the ones whose values and cultures are to be strengthened, their full participation is indispensable for agroecological research. Consequently, a sharp line cannot be drawn between the researcher and the farming practitioner, between formally trained scientists and the bearers of traditional knowledge, and between the practices of obtaining knowledge and the farming practices themselves.

The space of alternatives

Agroecological practices can be improved by incorporating input from research of this more encompassing kind. Thus, assessing the potential of agroecology (and, hence, more generally of the prospects for FS) needs to take into account the novel possibilities that regularly are opened up by engaging in this research. Unless these possibilities are considered, the claim "no other possibilities", cannot be vindicated in empirical inquiry. When "no other possibilities" is appealed to in the discourse of legitimation of using transgenics – "developing and using transgenics is necessary to feed the world (to achieve food security)" – it lacks empirical vindication, for this discourse does not recognize any science except decontextualized science; and so, it simply represents an ideological presupposition. It could not have empirical vindication, unless it were arrived at in the course of addressing questions about 'the space of alternatives':

¹⁸ Altieri refers to generalizations in which "mineral cycles, energy transformations, biological processes, and socioeconomic relations" are considered in relationship to the whole system ... concerned not with "maximizing production of a particular system, but rather with optimizing the agroecosystem as a whole" and so with "complex interactions among and between people, crops, soil and livestock". Vandermeer: "The alternative program requires deeper knowledge, acknowledging the complexity of the agroecosystem from the chemistry of its soils, to the interactions in its pathosystems, to the social structures that organize it" (p. 338).

- What agricultural methods conventional, transgenics-oriented, organic, subsistence, biodynamic, agroecological, permaculture, ecologically sustainable, system of rice intensification, indigenous, and others including those adapted to urban environments and in what combinations and with what locally specific variations, could be sustainable (including in the current situation of global warming/climate change), relatively free from risks, and sufficiently productive, when accompanied by viable distribution methods, to meet the food and nutrition needs of the whole world's population for the foreseeable future?
- Are there alternatives with productive capacity comparable to (or greater than) that of transgenics? Alternatives that could satisfy food and nutrition needs in contexts where transgenics methods have little applicability not necessarily a single alternative, but a multiplicity of complementary, locally-specific alternatives, a diversity of approaches apt for the variety of environments and conditions needed for the strengthening of human agency, and that together have the features listed in [B]?

Re-institutionalizing science

The space of alternatives cannot be investigated with decontextualized methodologies. Questions about it are always of first importance for scientific research that aims to contribute towards programs and practices that embody $V_{SJ\&S...}$ and/or reflect the aspiration of FS. The expanded conception of science as systematic empirical inquiry makes possible its investigation, and strengthens the scientific credentials of engaging in the programs and practices of FS.

These matters point to the need to re-institutionalize science (Lacey, 2007, 2008, 2012a), so that it would have broad democratic participation and oversight — in order to redirect the uses of scientific knowledge and the priorities of research, to make use of important methodologies that are currently marginalized, and to create spaces where researchers can *begin with* the aspirations, assessments of needs, and practices of the social movements (like LVC), and involve their participation in an integral way. Then, the forms that science takes, and the kinds of questions it addresses, could be determined in collaboration with the social movements and reflect their values and experiences; and the prospects for furthering the practices and policies linked to FS could be explored in alliance with such a re-institutionalized science.

Afterthought

In a democratic society, it is difficult to reconcile dismissing out of hand the programs, practices, aspirations and claims of FS with the endorsement of the *International Covenant on*

Economic, Social and Cultural Rights [ICESCR] that, in Article 11, recognizes 'the fundamental right of everyone to be free from hunger'.

ICESCR, in Article 15, also recognizes the right 'to enjoy the benefits of scientific progress and its applications'; and State signatories to ICESCR agree to take steps 'to achieve the its full realization. The Special Rapporteur (appointed by the UN) identified four core components of the right: "access by everyone without discrimination to the benefits of science and its applications, including scientific knowledge; opportunities for all to contribute to the scientific enterprise and the freedom indispensable for scientific research; participation of individuals and communities in decision-making about science; and development of an enabling environment fostering the conservation, development and diffusion of science and technology" (Wyndham, 2013b).

If science is understood as decontextualized science, this 'right' might be difficult to reconcile with the aspiration to FS. If understood in the expanded sense that I have introduced, then 'opportunities for all to contribute to the scientific enterprise' and 'participation of individuals and communities in decision-making about science' could provide impetus to re-institutionalize science as proposed at the end of the previous section. On this understanding the rights, recognized in Articles 11 and 15 respectively, would seem to mutually reinforce each other, and underlie the significance of the programs and practices of FS.

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Food Sovereignty: A Critical Dialogue

INTERNATIONAL CONFERENCE YALE UNIVERSITY SEPTEMBER 14-15, 2013



http://www.yale.edu/agrarianstudies/foodsovereignty/index.html

FOOD SOVEREIGNTY: A CRITICAL DIALOGUE INTERNATIONAL CONFERENCE PAPER SERIES

A fundamentally contested concept, food sovereignty has — as a political project and campaign, an alternative, a social movement, and an analytical framework — barged into global agrarian discourse over the last two decades. Since then, it has inspired and mobilized diverse publics: workers, scholars and public intellectuals, farmers and peasant movements, NGOs and human rights activists in the North and global South. The term has become a challenging subject for social science research, and has been interpreted and reinterpreted in a variety of ways by various groups and individuals. Indeed, it is a concept that is broadly defined as the right of peoples to democratically control or determine the shape of their food system, and to produce sufficient and healthy food in culturally appropriate and ecologically sustainable ways in and near their territory. As such it spans issues such as food politics, agroecology, land reform, biofuels, genetically modified organisms (GMOs), urban gardening, the patenting of life forms, labor migration, the feeding of volatile cities, ecological sustainability, and subsistence rights.

Sponsored by the Program in Agrarian Studies at Yale University and the Journal of Peasant Studies, and co-organized by Food First, Initiatives in Critical Agrarian Studies (ICAS) and the International Institute of Social Studies (ISS) in The Hague, as well as the Amsterdam-based Transnational Institute (TNI), the conference "Food Sovereignty: A Critical Dialogue" will be held at Yale University on September 14–15, 2013. The event will bring together leading scholars and political activists who are advocates of and sympathetic to the idea of food sovereignty, as well as those who are skeptical to the concept of food sovereignty to foster a critical and productive dialogue on the issue. The purpose of the meeting is to examine what food sovereignty might mean, how it might be variously construed, and what policies (e.g. of land use, commodity policy, and food subsidies) it implies. Moreover, such a dialogue aims at exploring whether the subject of food sovereignty has an "intellectual future" in critical agrarian studies and, if so, on what terms.

ABOUT THE AUTHOR

Hugh Lacey is Professor Emeritus of Philosophy at Swarthmore College; and Visiting Professor, Institute of Advanced Studies, and Research Fellow in the 'Thematic Project', "The origins and meaning of technoscience: Science, technology, values and society", University of São Paulo, Brazil. He is the author of Values and Objectivity in Science (2005), and A Controvérsia sobre os Transgênicos: Questões científicas e éticas (2006).