Thinking About “Land Grabs”: Food Security, Food Prices, and Large-Scale Land Acquisitions

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Abstract

Causal Loop diagrams are used to examine the relationships between international food price spikes, large-scale land investments intended to secure food availability, food and land speculation, other demands on land, and consequences for local people where the land has been acquired. A complex framework emerges providing a basis for looking at these issues in a holistic manner.

Key Words: Land grabbing; food prices; large-scale land investment; green grabbing; food price spikes; food security;

Introduction

What is Land Grabbing?

The concept of “land grabbing” typically refers to the acquisition of large blocks of land in developing countries by “foreigners” to produce food for export back to a “home country” or for sale on international markets. A typical example might be the acquisition in East Africa by a dry, food insecure, middle eastern country, of land for the purpose of growing food staples (e.g. wheat, maize, rice) to enhance their own food security. Alternative examples might be the acquisition of large blocks of agricultural land by corporations to produce food for sale via international marketing channels.

Land grabbing most often refers to land acquired for agricultural purposes, but the concept has been extended to land obtained for: conservation purposes (*green grabbing*) often including land to be used for climate mitigation (biofuel crops and carbon sequestration), aquaculture (*blue grabbing*), and of course the use of land for plantation crops (e.g. oil palm which is also a biofuel crop), and many other uses where critics have detected an unfair advantage of the land grabbers vis-à-vis the original, local, inhabitants who may, or may not, actually own the land or have some communal rights to the land. In this document I focus on land obtained for agricultural purposes… especially for the production of food. Nevertheless, these various other uses often compete for the same land and can have an impact on land prices, food supply, and the well-being of local people.

Note: This revision of March 2019 includes minor edits.

Use of foreign owned land for large-scale agricultural production is not new. In the past such land was used for production of plantation crops that could not be grown in the home country (e.g. tea, coffee, sugar, cacao, rubber, coconuts, banana, cotton, etc.). Although the plantation approach, as well as the newer agricultural schemes, potentially create benefits for local people, the imposition of foreign owned plantations has tended, on balance, to produce negative outcomes for local people throughout history.

Deininger et al. (2011), in a World Bank report, attempts to provide a comprehensive overview of large-scale land acquisitions and related issues, especially regarding efforts to make land deals productive and equitable. To counteract possible problems they suggested some voluntary 'principles for responsible agricultural investment'. However, others see these same principles as further facilitating large-scale agricultural investment, and criticize Deininger et al. (2011), pointing out that their analysis portrays an overly optimistic view of benefits for local people. For example, Borras and Franco (2012) refer to the approach of Deininger et al. (2011) as the 'rebranding' of 'land grabbing' as 'large-scale land investments' and discuss the dangers of using terms like this and 'corporate good governance' to hide business deals that can harm local people and their way of life. The real concern about land grabbing is its ultimate effect, not only on actual food supplies and the destination of that food, but also its effects on the current inhabitants of that land.

Individual, completed, land acquisitions range from 10,000 to over 1,000,000 ha. The Land Matrix, as of 1 March 2015, lists over 1,000 land deals covering more than 38×10^6 ha as finalized. Over 60% were for food crops or had a food crop component.

Primary Drivers of Land Grabbing

Many interlinked factors have driven the recent episode of land grabbing. Cotula et al. (2009) provides a concise summary of "drivers behind the land deals" in which he discusses: food security and rising food prices, increasing demand for land for biofuels, land needed for non-food agricultural commodities such as cotton and rubber[1], the increasing role of the private sector and its expectation of return on investment, large-scale carbon markets and the resultant effect on demand for land, and lastly, incentives provided by potential host countries who see foreign investment as a potential source of both food production and technological knowledge. White et al. (2012) provide a comprehensive historical perspective of these "corporate land deals". Nevertheless, proponents of land deals argue that the new activities will provide employment, and that some of the food produced will be locally available.

Other demands for land have also been cited as contributing to land grabbing. Biodiversity conservation efforts often exclude people from their land, and often the flow of benefits from the resulting protected areas (i.e., parks and nature reserves) goes to outsiders, such as tourists and tour operators, rather than to the original inhabitants (Benjaminsen and Bryceson,

[1] Cotula et al. (2009) include crops such as tea, coffee and cacao as non-food commodities.

2012). Consequently, international agreements such as the International Convention on Biological Diversity are seen by some as contributing to the problem of land grabbing (Corson and MacDonald, 2012). Similar "green" large-scale efforts to sequester carbon to counteract global warming may also contribute to perceived and real land shortages. Efforts to establish biomass plantations also require large blocks of land, and these efforts are similar to existing plantations where trees are grown for papermaking. These activities can all contribute to shortages of land that otherwise would be used by local people to support themselves and their communities.

Some authors (e.g. Zoomers, 2010) include additional factors that contribute to land grabs. Some of these: the development of infrastructure projects, urban growth, large-scale tourist facilities, and "home" land purchased by a country's diaspora, might be simply regarded as "normal" activity which, nonetheless, makes agricultural land scarcer.

Given the above information as a starting point, the purpose of this paper is to summarize and elucidate some of the causal factors related to land grabbing and its likely primary cause: food shortages.

Demand for Food

Food Shortages and Food Prices

Despite the many factors listed above, most authors acknowledge that real, perceived, and expected food shortages are primary drivers of land grabs. Localized food shortages and resulting civil unrest have been a common occurrence throughout history, and these have recently (2007 – 2008, 2011) become important again. Past food riots, with exceptions, have often been characterized as a facet of more general social unrest… as a focal point for more general grievances (Taylor, 1996). But recent riots during 2007-08 were certainly tied directly to food shortages and rising food prices (Patel and McMichael, 2009; Sneyd et al., 2013), although Berazneva and Lee (2013) also stress the role of political and economic factors. In response to these problems, governments will attempt actions to ensure food security. Actions may include expensive subsidy programs or

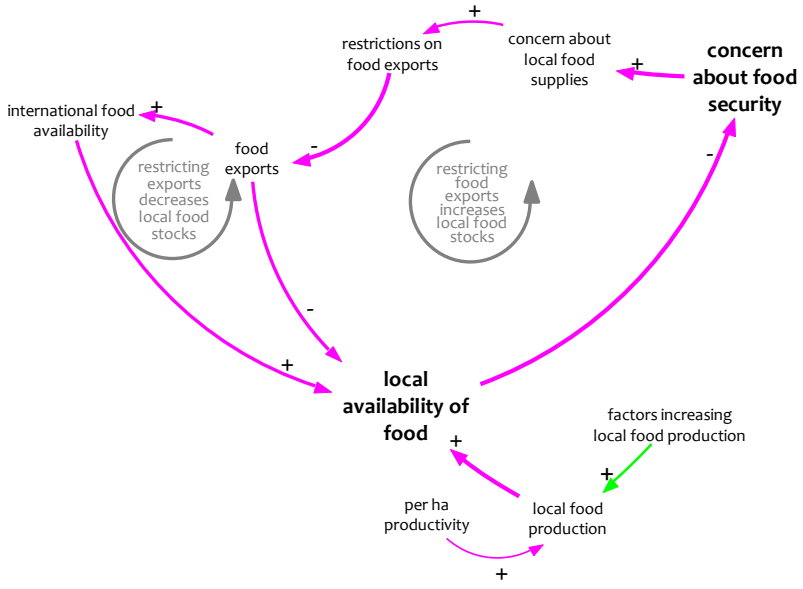

Figure 1. First level causal factors affecting local food availability.

restriction on exports. In 2007-8 restrictions on food exports had the unintended consequence of dramatically increasing international food prices and therefore local prices as well:[2]

> "The initial price rise came in October 2007 when the Indian Government limited rice exports in order to offset the effects of rising wheat prices on the cost of living index. Fears that this might lead to a shortfall led to panic buying by governments of poor rice-importing countries, which drove up prices to unprecedented levels" (Gilbert and Morgan, 2010).

> "Some governments panicked in the face of the 2007–08 food price rise and the subsequent political unrest. They set price caps, banned exports, and increased subsidies without analyzing the long- and short-term effects of their actions. In the short term, the welfare gains from these interventions may exceed the welfare losses, but in the long term these policies can have serious unintended effects." (Von Braun and Tadesse, 2012).

A simple diagram (Fig. 1)[3] illustrates two consequences of *restrictions on food exports*. Such restrictions will increase the *local availability of food* as expected. But as other countries also implement this policy, export restrictions will lower *international food availability* making food imports more expensive, raising local prices and making food less available.

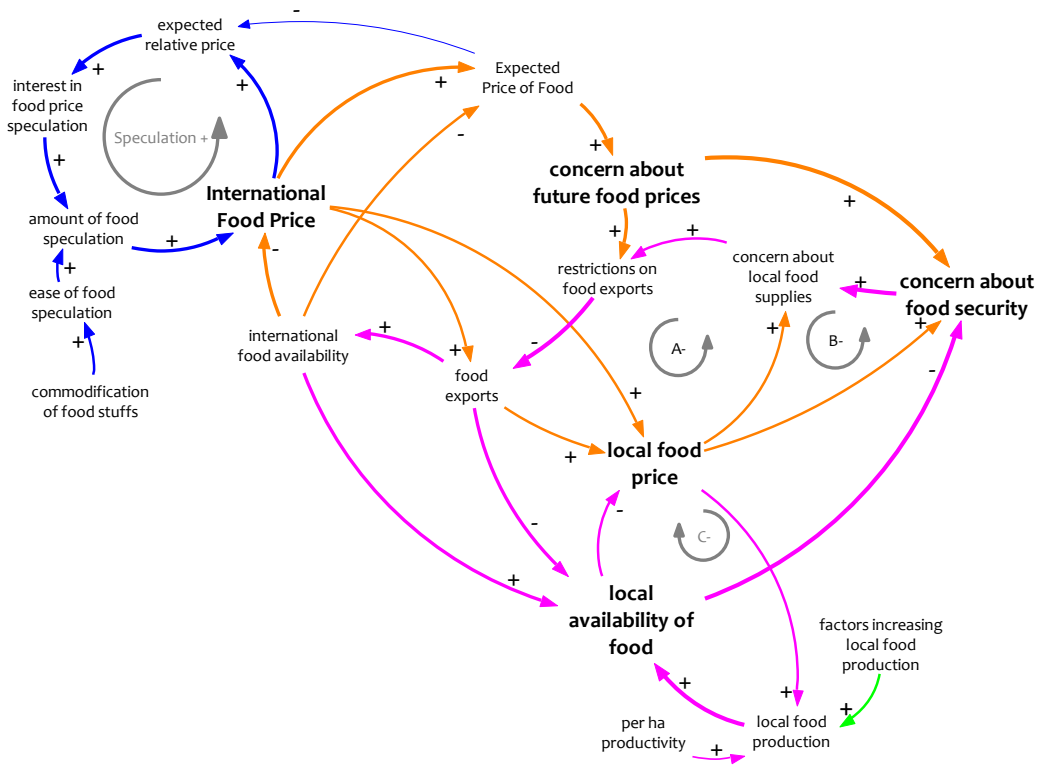

Figure 2. The addition of factors affecting food prices (orange arrows) and food price speculation (blue arrows).

[2] For simplicity I have omitted discussion of food price subsidies, related policies and consequences.

[3] A complete causal loop diagram is at the end of the document as are directions for "reading" these diagrams. See page 13.

Figure 2 extends this discussion to include more detail about international food prices (orange arrows) and food price speculation (blue arrows). The inclusion of food prices adds many additional feedbacks to the picture. Some, like those labeled A, B, and C, demonstrate the role of food prices in reinforcing the effect that availability of food has on concerns about food security. While changes in food availability and in food prices have similar effects on the food security outlook, the addition of price also brings some new elements into play.

Food Price Speculation

Several authors have discussed the role that food price speculation had in creating the food crises of 2007-8 and 2011. The historical role of food commodity speculation, its current level of acceptance internationally, and its effect on food price volatility have been convincingly discussed by Berg (2011). Typically food commodity speculation amplifies other causes of food price spikes (e.g., food shortages caused by adverse weather). Expected or perceived food shortages then may lead to hoarding of food for future use or sale… speculation at the local level. On a larger scale, heightened interest in food commodity speculation has been made possible by the commoditization of foodstuffs which simplifies such investments. Rising food prices, coupled with low interest rates, which decreased other investment options, encouraged a switch to investment strategies such as food speculation (as well as speculation in agricultural land -- see below). Food price speculation also leads to higher price volatility which can interfere with price – demand – supply feedbacks (Prakash, 2011). Lagi (Lagi et al., 2012; Lagi et al., 2011a) have demonstrated that speculation played a significant role in the 2007-8 and 2011 food price spikes.

Citizen dissatisfaction, as a response to government failure to provide for basic food needs, has been analyzed by Lagi et al. (2011b). Thus, food price speculation can amplify food price rises, regardless of the triggering mechanism, and this can lead to civil unrest which leads to further concern about food stocks by citizens and governments. The consensus is that the role of speculation was a contributing factor in food price spikes, and that this role was magnified by the effect of low interest rates that drove investors to look for new investment tools.[4]

Sneyd et al. (2013) contrast causal factors leading to food riots as reported in the international vs. local (African) press. They provide a glimpse into the perceived reasons behind such riots using proto-causal loop diagrams to describe chains of causality. Among these causal factors were the perceived role of global profiteering, profiteering by local merchants, and citizen feeling of dissatisfaction and lack of power.

Thus initial food shortages, perhaps made worse by local food speculation, created civil unrest, prompting governments to ban food exports furthering fears about food supplies and also

[4] Long-term rises in food prices have also been linked to corn ethanol subsidies in the US, but this effect was more gradual (Lagi et al., 2012; Lagi et al., 2011a; Lagi et al., 2011b), although Headey and Fan (2008) in their analysis of factors affecting food prices found little evidence that commodity markets significantly affect "real supply and demand factors".

limiting international availability of food for import. Rising food prices stimulated speculation, which amplified the food price spikes.

Demand for Land

Large-scale Land Acquisition for Food Security

As stated by von Braun and Meinzen-Dick (2009):

> "One of the lingering effects of the food price crisis of 2007–08 on the world food system is the proliferating acquisition of farmland in developing countries by other countries seeking to ensure their food supplies."

As illustrated in Figure 3 (light green arrows) countries' growing *concern about food security* led them to seek tracts of land in other countries. This growing *demand for land* further stimulated the *concern about food security* and the *perceived shortage of land*. The perceived shortage and the demand for land both lead to a further effect on land prices (Figure 3, dark green arrows). Rising *price of land* will tend to depress *demand for land*, but will also further increase concerns about land availability.

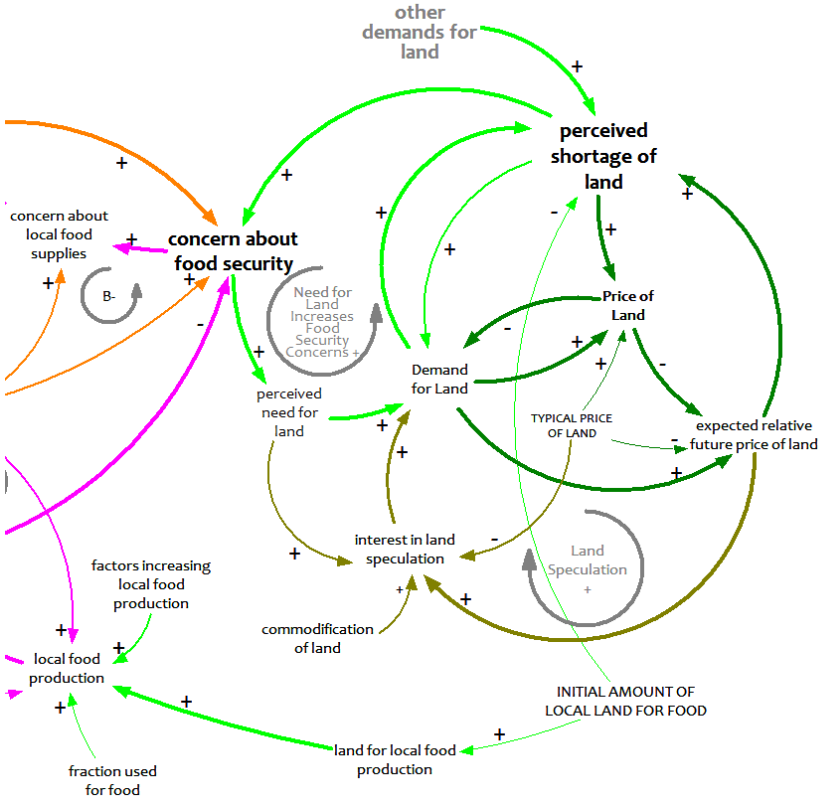

Figure 3. The addition of land (light green arrows), land prices (dark green) and land speculation (olive green).

Land Investment and Speculation

Attempts to secure land and the resultant rise in land prices have stimulated speculation both directly in land, and also in the corporations that are securing land for growing food. The attraction of these investments stems from both the expected returns from improved agriculture and from appreciation of land values (Cotula, 2012). Rising land prices then, up to a point, stimulate further investments in land for purely speculative reasons (Fig. 3. Olive green arrows). Ultimately the expected future price of land drops, stopping or reversing the speculative spiral. An additional factor influencing these investments is the encouragement by the World Bank of foreign direct investment as a means of developing food production capabilities in developing countries (Daniel, 2012). As the hype and the reality of land grabbing grow, there is an increased speculation in land both by international, national and local entities. Although much of the focus on land acquisitions has been directed toward discussions of transnational and direct corporate deals, some have also expressed concern at the growing interest in land by private institutional investors such as mutual funds, hedge funds, and pension funds (Daniel, 2012).

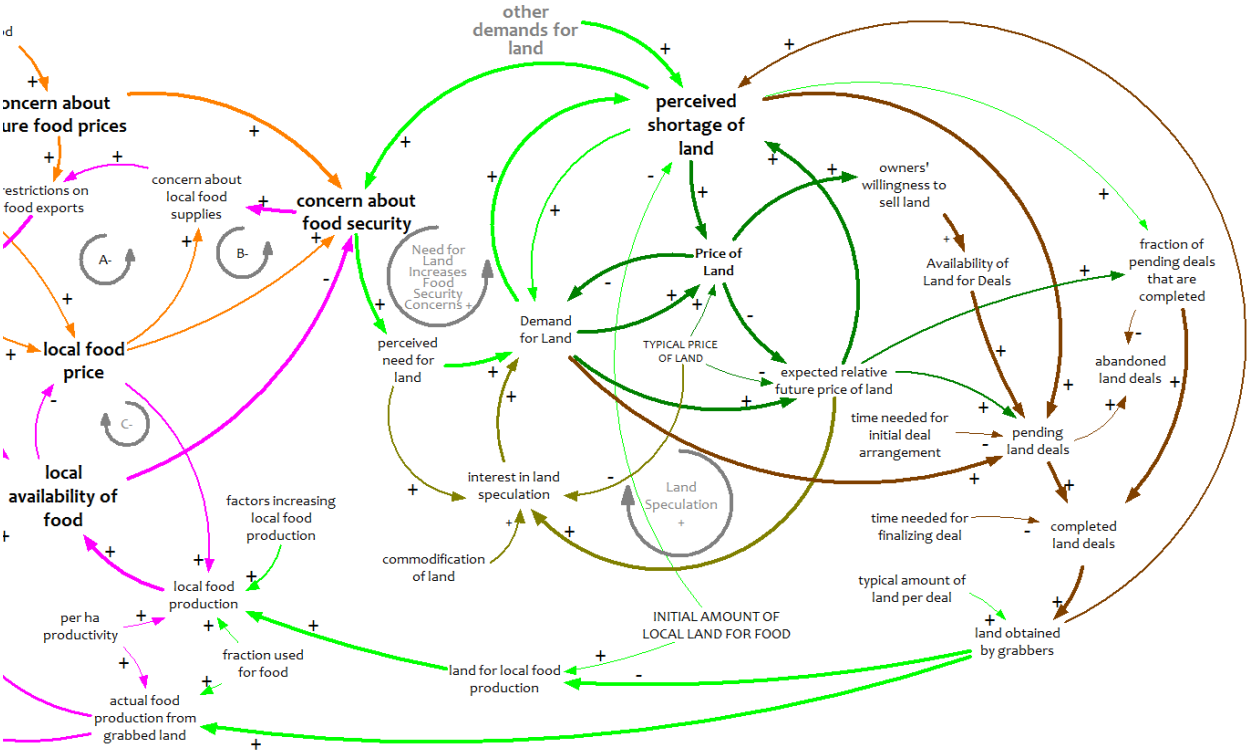

Figure 4. The addition land deals (brown arrows).

Land Deals

Basic Arrangements

Land deals are completed when the buyer and the (apparent) owner reach agreement on the land to be sold, the selling price, and other, sometimes complex, arrangements.[5] Factors affecting the dynamics of land deals are illustrated in Figure 4 (brown arrows related to deals and some additional green arrows related to the land itself). Note that not all pending land deals are finalized. Some fail. Some agreements fail because of changes in agreed upon price or other details[6], while others fail due to local community or NGO opposition (see below). Note also that not all land taken is actually used for food production even if that was the original intent. In some cases, the original plan is altered and non-food crops are grown, or the land may be partly or wholly abandoned. Land actually used for food production may enhance or diminish local food supplies depending on the destination of any food actually grown. Proponents of land deals claim that use of modern agricultural methods will greatly enhance food production above what was previously grown, producing sufficient stocks for export and for local consumption as well. Theoretically then both local and international stocks of food could be increased. Critics claim that grabbed land will be removed from local production lowering in-country food production and raising the risk of food shortages.

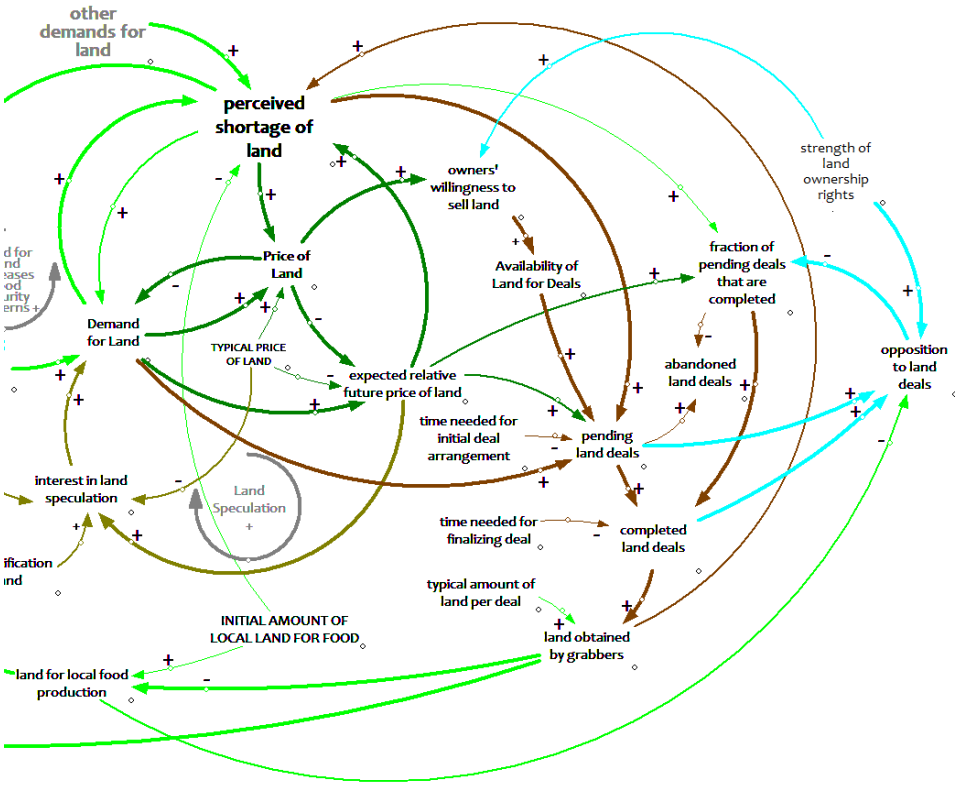

Figure 5. The addition of land rights issues and opposition to land deals (light blue arrows).

[5] Such deals may include, for example, a provision that a portion of food produced will be available locally, or a provision that displaced local people will be trained in modern agricultural techniques, or that they will be hired on the new farms, etc.
[6] Some arrangements fail because the real intent of the investor was to acquire land for other uses. The most common example is the acquisition of land so that the forest can be logged after which the land is abandoned.

Land Rights and Opposition to Land Deals

As land deals increase and land for local food production decreases, concerns arise among local people and their supporters. Ultimately these concerns foment opposition to the land grab schemes and this will limit the likelihood that pending land grab deals will be completed (Figure 5 light blue arrows).

A major source of controversy about land deals is that, typically, smallholder farmers, at the edge of poverty, live and work on much of the land within proposed land deal areas (De Castro et al., 2013). Often the land is assumed vacant (Geisler, 2012), or is considered state land and land deals are made with little concern for the current occupants who often have communal or customary right to the land, rights which are often not officially recognized (German et al., 2013; Schoneveld, 2014). This situation has led many to assume that a strengthening of individual land rights would strengthen the bargaining position of local people vis a vis the investor (and government entities if they are involved).

However, counterintuitively, the acquisition of secure rights to land can lead to a loss of that land. De Schutter (2011) provides a detailed discussion of the negative consequences of land grabs on land tenure and land rights, particularly in cases where legal "individual land rights" have already been secured. He addresses the negative consequences of secure land rights, particularly with regard to loss of communal lands and risks associated with the use of land for collateral. While the granting of secure land tenure rights is often seen as a means of solving many rural problems and giving power to local people, it also puts these new land owners under pressure to sell their land if personal finances are limited, often the case, or if land prices seem particularly good. Thus in many cases, secure individual land rights facilitate a loss of land, especially when global land and food prices are rising. Meinzen-Dick and Mwangi (2009) also discuss how the gradual formalization of property rights tends to exclude more traditional land tenure arrangements (e.g., communal lands) that are particularly suited for variable landscapes and climate. Mwangi (2009) details how traditional land tenure arrangements, in dry-land Africa, are more suitable for the particular issues faced: rainfall variability, need for extensive areas for grazing, changing livelihood patterns, need for variety, and how restrictions on available rangeland result in overuse.

Consequently, the formalization of *strength of land ownership rights* is a confusing aspect of the land grabbing question. On the one hand secure land rights can help ensure that land stays in local hands, or at least that local occupants of the land are justly compensated. This fact may strengthen opposition to land grabs. However, given the realities of poverty coupled with rising land prices, land rights may weaken the landowners' ability to remain on the land because the ownership rights allow them to sell the land more easily (Fig 5. Light blue arrows). Nevertheless, there are some local efforts to counteract land grabs, and some of these have been successful (Krijtenburg and Evers, 2014).

Other Issues

Green Grabbing: Biodiversity, Climate Mitigation, Environmental Services

In this discussion, for simplicity, I have not included land acquired for reasons other than food crops. In reality a significant proportion of land grabs involve various aspects of what has come to be called "green grabbing": the acquiring of land for conservation and climate change, including biofuel, goals.

As stated earlier, biodiversity conservation efforts can exclude people from their land, while benefits of such conservation initiatives often flow elsewhere. Similarly large-scale "green" projects to sequester carbon to counteract global warming may also displace local people and use land otherwise available for agriculture contributing to real and perceived land shortages. In fact some of these programs (e.g., the Clean Development Mechanism of the Kyoto Protocol), meant to assist the rural poor, have been quite controversial because of their land requirements (e.g. see: Ching et al., 2011; De Schutter, 2011; Fairhead et al., 2012; Leach et al., 2012). The establishment of biomass or biofuel plantations (e.g., oil palm or jatropha) require large blocks of land which increase demands on land and contribute to rising land prices and speculation. Because raw materials for biofuel and for food may be the same crops (e.g., maize and oil palm) increases in food price volatility may be made more likely by biofuel mandates (Wright, 2011). The sale of benefits from ecosystem services,[7] while often intended to assist small holders, may limit on-farm activities but can also provide replacement income. In some cases the combined effect of various forms of land grabbing leave local people with few options (Lunstrum, 2015). Nevertheless, Ching et al. (2011) believe there is, at least, potential for small scale farmers and governments to participate in a meaningful way to gain benefit from programs such as global carbon markets, and green certified crops.

A Note on the Accuracy of Land Grab Data

As described above, several authors have detailed instances of international deals to acquire land in Africa, South East Asia and Latin America. Others have called for a better vetting of details and viability of such deals. Until recently accurate published reports were limited and advocacy groups, working to help local people, did not verify, or even exaggerated, stories of land grabbing. Edelman (2013) provides a summary regarding the accuracy of land-grabbing data and cautions that using widely circulated and often exaggerated land-grabbing data can undermine legitimate concerns about land grabbing. Scoones et al. (2013) address this issue in detail and call for a more meaningful and careful approach that provides accurate details and thoughtful analysis; apparently this has been attempted. Organizations such as The Land Matrix (http://www.landmatrix.org/en/) and GRAIN (http://www.grain.org/) are working to improve the accuracy of their databases. But land area is only one characteristic of land deals. Land quality, the number of people affected, land recipients, and intended land uses are all also critically important – especially if claims are being made that the intended projects will benefit local people (Scoones et al., 2013).

[7] For example, high quality water from protected forest watersheds.

Summary and Conclusions

Food security concerns were set off by apparent food shortages aggravated by actions of governments to limit food price rises. These spikes in food prices were likely made worse by speculation. The concerns about food security led to the modern era of land grabbing which started with efforts, at first by governments, to obtain land to ensure future food supplies. Rising prices of farmland and the consequent dwindling apparent availability of land stimulated additional interest in farmland investments, which was strengthened by institutional investors looking for new opportunities. At the same time a growing interest in climate change mitigation, via both carbon sequestration and biofuel production, made additional demands on land further stimulating the large land investments (Fig. 6).

A consequence of this web of events was that rural people in developing countries find themselves suddenly moved from their land with little if any compensation. Those who actually owned the land they occupied face rising pressure to sell their land at unusually high prices compared to the limited living they could obtain from that land.

A fairly large academic literature has emerged focused on the plight of these rural poor and the negative consequences of land grabbing. Less discussed are the possible benefits which could come from improved agricultural production and the introduction of improved farming systems. Assessment of potential benefits is not within the scope of this study but obviously are of great importance. Proponents of large-scale agricultural investments expect improved employment opportunities, a spillover of technologies to rural farmers, and an overall improvement in the economy in areas where agricultural investments have been made. This, they say, will lead to improved schools, roads and other infrastructure. In fact, belief in these possible benefits has led some countries to seek such agricultural investments (Cotula, 2012), and some contract farming arrangements have benefited local growers (Barrett et al., 2012). Nevertheless, German (2014), in a comprehensive review, found “serious weaknesses” in the various governance structures that might otherwise maximize benefits to local people.

While the conceptual model presented here is sufficient to give a holistic grasp of the interconnections among the elements of the global food and land system, it cannot, as it is, help answer specific policy questions.[8] Nevertheless it does provide a minimal framework around which we can structure such questions.

The existing structure is sufficiently complex that adding addition structure would likely be counterproductive. Nevertheless, one might speculate about what elements would be added if additions were warranted. One weakness in the conceptual model structure is the confounding of food exporting and food importing countries. While it is true that many countries both import and export food (India, mentioned above is a good example), a clearer separation of international food stocks from within country food stocks might be useful. Coupled with that separation might also be the differentiation of land rich and land poor

[8] Such as: How to minimize food price spikes, or the effect of implementing a three-month warning prior to food export restrictions.

countries or, perhaps better, benefits that might accrue to investor countries and target countries. Depending on the questions to be asked, one might also consider a closer examination of the cooperative options open to land investors that would truly bring mutual benefits to all stakeholders (e.g. see Sherman, 2015), and how such outcomes could be made more likely.

A note on reading causal loop diagrams:

In creating the causal loop diagrams, the following conventions have been used:

Each arrow represents a causal relationship. That is, each arrow points from a cause to an effect.

If an arrow is marked with a plus (+), then the relationship is read: "as the first variable changes, then the second variable will change in the same direction, other things being equal." Thus in Figure 1 we could say either "as concern about local food supplies increases then restrictions on food exports will also increase, other things being equal" OR "as concern about local food supplies decreases then restrictions on food exports will also decrease, other things being equal."

If an arrow is marked with a minus (-), then the relationship is read: "as the first variable changes, then the second variable will change in the opposite direction, other things being equal." Thus in Figure 1 we could say either "as local availability of food increases, then concern about food security will decrease other things being equal", OR "as local availability of food decreases, then concern about food security will increase, other things being equal."

It is often the case that all other things are not equal. That is, there are other factors affecting the second variable.

In the diagrams the thickness of lines gives a general guide as to the importance the author believes should be assigned to the relationship between two variables. Yet, this importance can vary as values of model components change.

Importantly, feedback loops can be identified in diagrams by following arrows along any path that leads back to the original model component. If the arrows used along the path are all positive, or if the path includes an even number of negative arrows, then the loop is a positive feed-back loop. A positive feedback loop tends to cause reinforcing behavior, as in vicious or virtuous cycles. If the path contains an odd number of negative arrows, then the loop is a negative feed-back loop. Negative feedback loops tend to cause stability in a system.

For additional information regarding causal loop diagrams see Ford (2010 chapter 9); Sterman (2000 chapter 5).

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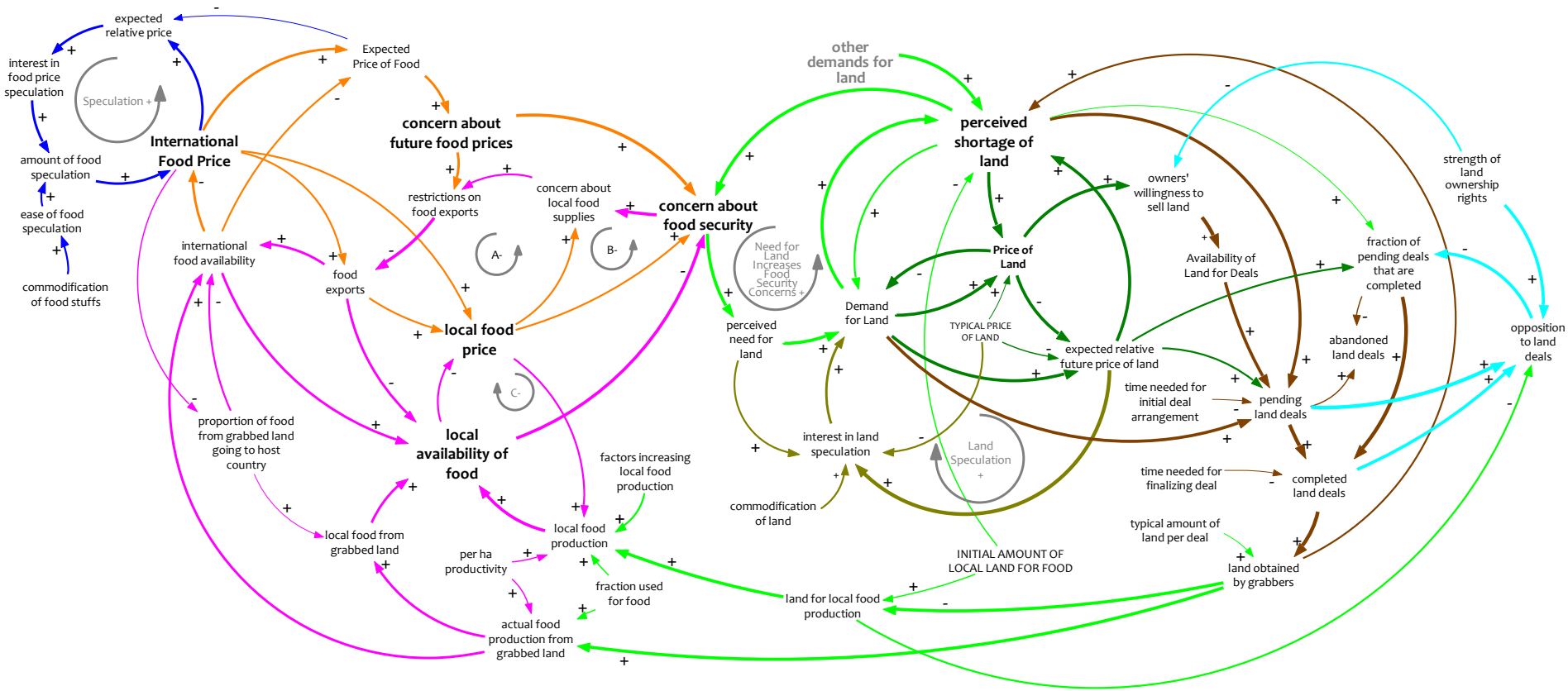

Figure 6. Complete causal loop diagram: Food price spikes and large-scale land acquisition.