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Abstract

This paper surveys the existing empirical evidence on the unintended consequences of food aid. Micro-level evidence is presented on the impacts of food aid deliveries on household labour supply, production incentives, consumption patterns and natural resource use. At the meso-level, evidence on the impact of food aid on market development, market prices, informal insurance arrangements, and the behavior of implementing agencies is surveyed. Macro level evidence on the impact of food aid on balance of payments, economic growth, international trade, exchange rates and other factors is reviewed. Although food aid can have negative unintended consequences, the empirical evidence is thin and often contradictory. The available evidence suggests that harmful effects are most likely to occur when food aid arrives or is purchased at the wrong time, when food aid distribution is not well targeted to the most food insecure households, and when the local market is relatively poorly integrated with broader national, regional and global markets. These results imply the need for caution in basing food aid programming decisions on a relatively weak body of empirical evidence.

Key Words: food aid, aid effectiveness, dependency, disincentives, trade distortions.

JEL: F35, O19, Q17, Q18.

* This paper draws heavily on Barrett and Maxwell (2005) and Lentz, Barrett and Hoddinott (2005). I thank Terri Raney, Dan Maxwell, Sarah Lowder, Erin Lentz and John Hoddinott for extensive and extremely helpful discussions. Any remaining errors are mine alone.

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I. Introduction

Food aid today is widely – and accurately – considered an instrument for addressing acute and chronic food insecurity in low-income communities. Although the main food aid programs were not originally focused on humanitarian objectives, and despite the fact that donor country agricultural surplus disposal, trade promotion and other motives still sharply constrain what can be accomplished with food aid, the core intent of most food aid today is plainly to relieve unnecessary human suffering. In a world in which nearly half the population survives on $2/day or less, more than 800 million people go to sleep hungry any given night, and a child dies every five seconds due to hunger-related causes, the need to respond to the poor's need for food is ever-present and widespread.

While there is effectively universal agreement as to the desirability of the goal of reducing acute and chronic food insecurity, there remains considerable dispute as to how effective food aid is in achieving the goal. Part of the concern stems from the multiple objectives that underpin many food aid programs, sometimes inducing suspicion that the humanitarian face of food aid is merely a morally appealing cover for inherently objectionable corporate subsidies. But much of the concern arises instead because the ultimate impacts of food aid programs – like any other policy intervention – are not always as intended. The distinction between intentions and impacts is often an important gulf in debates over food aid, with those who question programs' impacts challenged by those who assert the programs' good intentions. The problem is that unintended consequences are sometimes quite important.

The concept of unintended consequences is a staple of economics. The basic idea is that the actions of governments, firms, individuals and other societal actors alter the incentives and constraints faced by other decision-makers, leading to feedback through induced behavioral response. Such feedback effects are often hard to anticipate but very real nonetheless. Unintended consequences can be favorable, as in Adam Smith's "invisible hand" effect of individually self-interested behavior leading to socially desirable outcomes or the "crowding-in" effects of certain public investments that induce complementary private investment. But generally people think of negative effects when they refer to unintended consequences, the attenuation of expected benefits due to some induced response to the original intervention.

The unintended consequences of food aid are commonly lumped under the catch-all label "dependency". Lentz et al. (2005) usefully explain that an individual, household, or community exhibits dependency when it cannot meet its immediate basic needs without external assistance.[1] Dependency thus defined is not necessarily an undesirable outcome. For households that cannot support themselves, such as those without able bodied adults, dependence on external assistance is very likely to be welfare enhancing when the alternative is destitution or worse. To distinguish this type of dependency from the more common,

[1] This definition is a generalization of that proposed by Harvey and Lind (2005). Harvey and Lind identify four main uses of the term dependency (see also Lensink and White, 1999 and Riddell and Sobhan, 1996): governments and aid agencies relying on relief resources (Riddell and Sobhan, 1996); aid receipt resulting in erosion of individuals' initiative (see Lappe and Collins, 1977); aid undermining local economies (see Isenman and Singer, 1977); and, aid receipt stigmatizing recipients (see Dean, 2004).

pejorative use of the term, Lentz et al. (2005) refer to this welfare-improving sort as "positive dependency." Helping individuals, communities and organizations meet basic needs when they otherwise could not – fostering positive dependency – is indisputably desirable. Indeed, positive dependency is almost always intended. Food aid programs aim to save lives among acutely food insecure populations.

The undesirable aspect, "negative dependency", arises when meeting current needs comes at the cost of reducing recipients' capacity to meet their own basic needs in the future without external assistance. Negative dependency typically arises when individuals, households or communities alter their behavior in response to the provision of assistance that unwittingly creates disincentives to undertake desirable behavior (e.g., to grow a crop, or to allocate time to work). Debates and discussions surrounding 'dependency' often confound short-term and longer term negative effects but they are almost invariably about the unintended consequences of a food aid intervention.

The objective of this background paper is to briefly summarize the literature on the intended and unintended consequences of food aid, emphasizing the latter because the former are reasonably obvious. The remainder of this paper is structured as follows. Section II reviews the intended and unintended consequences of food aid at the micro-level of individuals and households. Section III then steps up to the next level of analysis, considering food aid's meso-level effects, after which Section IV summarizes the evidence on macro-level effects of food aid. Section V concludes.

Before proceeding, let me emphasize that readers should exercise caution when assessing claims made in the literature. Some data sets and empirical methods are better suited than others to exploring complex questions of food aid's behavioral and welfare effects. Many of the alleged negative effects of food aid or negative dependency triggers (e.g., Lappe and Collins 1977; Jean-Baptiste 1979; Jackson and Eade 1982) are supported only by unverified anecdotes rather than by detailed ethnographic or econometric research. These reports of food aid causing negative dependency are based on aid and negative dependency's simultaneous existence rather than on a demonstrable causality. This distinction between causality and correlation is critical. As Hoddinott (2003, p.2) explains, "Purported disincentive effects are based on the assumption that receipt of food aid and other household characteristics are uncorrelated. This is a strong assumption. If food aid goes to poorer villages… or villages receiving shocks that reduce the returns to labour, then the claimed disincentive effect is merely capturing the impact of these other characteristics". Similarly, Barrett and Maxwell (2005, p.180) argue "…claims of dependency seem to have the direction of causality wrong. Shocks cause behavioral change that may necessitate various types of safety nets, including food aid. But food aid volumes transferred, in almost all cases, are simply too modest to make people dependent upon them, although they can help keep them alive and they can surely change the incentives that affect the behavioral choices they make…". Most recently, Abdulai, Barrett and Hoddinott (2005) find that there is indeed a negative simple bivariate correlation between household-level food aid receipt and on-farm labor effort or investment in Ethiopia or between national-level food aid receipt and per capita food production in sub-Saharan Africa; but when one controls properly for confounding effects that are likely correlated with both food aid receipt and labor effort, investment or overall productivity (e.g., rainfall, household characteristics), that negative relation disappears and sometimes even turns mildly positive. This background paper thus proceeds by integrating and critically evaluating concepts and hypothetical effects with reference to empirical findings, but does not restrict the discussion purely to effects that

have been rigorously demonstrated lest we overlook plausible but as yet under-researched phenomena.

II. Micro-Level Effects

To understand how positive or negative effects can arise from food aid, it helps to have a conceptual framework in mind. One approach is to begin with the idea that households control a bundle of assets or endowments. These include physical capital (agricultural tools, livestock), natural capital (owned land, access to common property resources), human capital (in the form of knowledge, skills and health), financial capital (cash-in-hand, bank accounts, net loans outstanding), and social capital (networks, norms and social trust that facilitates coordination and cooperation). In addition, households have labor power – the physical ability of household members to generate income. Households allocate these endowments across a number of activities including agricultural production, wage employment (both locally or elsewhere via migration and remittances), and non-farm, own-business activities. These allocations are based on perceptions regarding current and future returns to these activities, their variability and the extent to which returns move together (co-vary) or diverge. All these activities generate income. In addition, households may obtain income via transfers from other households, NGOs or from government.

With this in mind, consider Figure 1 (adapted from Lentz et al. 2005), which represents the possible impacts of food aid at a very general level. It shows that food aid flows can have two broad classes of effects: an insurance effect before (ex ante of) the flow, and a transfer effect after (ex post of) the flow. Both effects can alter behaviors (e.g., by changing incentives) and can generate positive dependency or can trigger negative dependency. The former are typically intended effects, while the latter, undesirable consequences are invariably unintended. But they can often be anticipated through thoughtful analysis.

Ex ante crisis, the expectation of assistance may induce behavioral responses in so far as prospective recipients anticipate food aid flows in response to an adverse shock, as shown in the bottom portion of Figure 1. Food aid may fill in holes in social safety nets, providing insurance to those who are otherwise uninsured (i.e., those lacking private support during a crisis). That is the aim of extant transfer and safety net programs. However, the unintended effect is that food aid may (also or instead) crowd out pre-existing informal and formal insurance arrangements operationalized through remittances, household labor exchange, and government relief efforts. If crowding out undermines safety nets already in place, leaving individuals less able to cope without outside assistance when a crisis occurs, it can trigger further need for food aid over time, a clearly unintended outcome.

Expectations of assistance may also induce increased risk taking, an effect economists label "moral hazard". Because the insurance will at least partially reimburse an actor if a low-payoff event occurs, actual risk exceeds the perceived risk that guides behavior, inducing individuals or organizations to take on more risk than they would if they fully internalized the consequences of their choices. Moral hazard is typically thought to be an adverse, unintended effect in that it may increase the frequency and severity of adverse shocks. But as an emerging literature on poverty traps emphasizes, if cautious management of risk induces poor households to choose low risk, low return livelihood strategies that leave them chronically vulnerable, providing insurance and encouraging a bit more risk-taking may be desirable as a medium-to-long-term strategy for inducing accumulation, growth and self-sufficiency (Dercon 2004, Carter and Barrett 2006). Thus encouraging risk taking among a

subpopulation otherwise predisposed towards conservative, low-return strategies may be intentional, although we know of few if any food aid programs for which that has been true to date.

Ex post crisis, the provision of food or cash is effectively an income transfer. As such, it increases local demand for food, with the increase in food consumption greatest when the transfer is provided in kind. When food aid is provided in kind, it also increases the supply of food. Food aid in kind typically leads to greater growth in supply than in demand following the basic logic of Engel's Law: demand for food increases more slowly than income. In the case of food aid, the income is provided in the form of commodities, thus food supply expands faster than demand. This has two potential effects. First, it will exert some downward pressure on local food prices if the local market is not extremely well integrated into broader national and global markets. Second, food aid will typically displace some commercial purchases, whether from domestic or foreign suppliers. Typically, neither price reduction nor market displacement effects are intended, but it is effectively impossible to avoid at least one – if not both – effects.

Food aid affects markets even when one does not bring commodities in from abroad. When assistance is instead provided in the form of cash for the local purchase of food or as cash transfers, it expands local food demand. This boosts commercial purchases, whether from domestic or foreign suppliers, and can increase local prices if the local market is not well integrated into broader national and global markets. This effect is sometimes intended, as local and regional purchases are often justified on the basis of helping to establish commercial marketing channels. But the effects can also be unintended, as when local purchases drives up food prices, thereby harming poor, net buyers who do not benefit from the food aid distribution.

Changes in prices or in the volume of food traded locally may have both positive, intended effects – e.g., freeing up scarce cash for recipients who are small farmers to invest in productivity-enhancing inputs during the growing season – and adverse, unintended effects, as when higher food prices fuelled by local purchases or cash transfers force poor consumers to liquidate precious productive assets (e.g., land or livestock) in order to meet immediate consumption needs, thereby compromising future well-being. Indeed, as we show below, it is typically impossible to have only intended, positive effects from a food aid program. If one has such effects, there are almost always unintended, adverse effects on some subpopulation.

Another reason for unintended effects of food aid is that most households neither understand who is targeted for aid nor how the quantity of aid per household is determined and thus do not adjust behavior to food aid flows; see Gilligan and Hoddinott (2005) for a recent Ethiopian example. Harvey and Lind (2005) refer to this as food aid lacking transparency and accountability. If food aid delivery is not reliable, then the efficacy of aid as household insurance is low. In turn, when households cannot rely on food aid delivery after a crisis, they are less likely to make ex ante decisions about livelihoods that depend upon aid receipt. So the intended effects of food aid as insurance become attenuated. Moreover, the quantity of food aid is usually too small to encourage household reliance on it (Barrett and Maxwell, 2005; Little, 2005; Lentz and Barrett, 2005). Further, it is often not clear to recipients if they will be targeted to receive aid at all (Bennett, 2001; Harvey and Lind, 2005). Little (2005) argues that the small amounts and the irregular timing of deliveries discourage Ethiopians from relying on food aid.

A. Intended Consequences[2]

The intended, micro-level effects of food aid are reasonably straightforward: to provide insurance to avoid catastrophic losses and to provide income transfers – often in the form of food – so as to guarantee at least minimal access to the food necessary to meet the internationally recognized human right to food. The aim is to save lives, protect assets and, when possible, sustainably improve beneficiaries lives through enabling investment in improved human nutrition and health, or in productivity-enhancements to household livelihoods.

Food aid used in humanitarian emergencies is largely intended to protect human nutritional status and human life, although in many kinds of emergencies, protecting livelihood assets is critical as well. The most common applications of food aid for protecting human life and nutritional status in acute humanitarian emergencies are: (i) general nutrition support, primarily through direct distribution of a basic food ration to vulnerable groups (based on some assessment of need); (ii) correcting malnutrition via supplementary or therapeutic feeding for especially acutely affected sub-groups; and (iii) food for work (FFW) if the emergency intervention is mounted rapidly enough to begin before people have been so badly affected by the crisis that they cannot undertake sustained physical labor. It is very difficult to get good figures on the impact of emergency food aid operations, given the context in which they take place. Nonetheless, emergency food aid is widely acknowledged to have protected the lives and health of hundreds of millions of emergency-affected people over the past fifty-plus years. Hence the growing focus on emergency assistance within the food aid community. WFP (2004) reported having devoted 90% of its resources to emergencies in 2003 and notes that number of deaths resulting from causes other than direct violence in emergencies dropped 40% during the decade between 1993 and 2003.

Outside of humanitarian emergencies, food aid's intended consequences become less clearly distinguishable from those of development interventions underpinned by non-food resources. Firm evidence on the broader nutritional impacts of non-emergency food aid sourced from abroad is strikingly scarce, although there is ample good evidence of favorable nutritional and healthy effects of food assistance programs more generally – food stamps, food subsidies, public employment schemes, school feeding programs, supplementary feeding programs, etc. – on participant food consumption, health or nutritional status.[3] Similarly, while interventions such as public works projects underpinned by food aid (as FFW), maternal and child health centers, school feeding programs, etc. justifiably receive widespread support as instruments of development policy, there remain legitimate questions as to whether this justifies food aid, rather than cash, as the means to support such interventions. The literature clearly suggests that food aid can effectively achieve its primary intended effects: to ensure adequate food for vulnerable peoples in humanitarian emergencies; in social protection and safety nets, as insurance against difficult-to-reverse loss of crucial productive assets, especially human health; and sometimes in support of more general development efforts.

[2] This section draws heavily on Barrett and Maxwell (2005), especially chapter 7.

[3] See the review in Barrett (2002b). Examples of more recent evidence on food aid specifically include Quisumbing (2003) and Yamano et al. (2003).

B. Unintended Consequences

Things do not always work out that way, in spite of the best intentions. Even the best designed and managed food aid programs suffer errors, primarily due to the inherent difficulty of targeting all of, but only, those who would otherwise be food insecure. Errors of exclusion/omission – inadvertently missing intended recipients – often lead to unintended, adverse humanitarian impacts associated with poor health and nutrition of vulnerable subpopulations. Meanwhile, errors of inclusion/leakage – inadvertently providing food aid to unintended beneficiaries – and food aid delivered at the wrong time or in an inappropriate form can often create unintended disincentives to desired behaviors.

1. Household labor disincentives

Perhaps the most pervasive – and we believe, misguided – claim is that food aid somehow makes people lazy, that food aid unintentionally discourages people from working. It is certainly true that microeconomic theory suggests that because transfers increase recipients' welfare, they generate income effects that will tend to reduce labor supply simply because even hard-working people prefer more leisure to less.[4] The economic reality that any transfer – whether in the form of food or not – discourages recipients from working, everything else held constant, undermines much popular support for transfers, as heated debates over the past decade about domestic welfare programs in Europe and North America have vividly demonstrated. The empirical evidence also shows, however, that labor supply becomes more responsive to changes in income as people grow wealthier. The implication is that targeting errors of inclusion magnify the labor market disincentive effects inherent to food aid (or any other form of transfer) by providing benefits to those who are most able and willing to turn transfers into leisure instead of increased food consumption. The distortionary effects of food aid on labor supply appear minimal when food aid is appropriately targeted to intended recipients. Put differently, when one encounters an apparent labor disincentive problem, this typically signals poor targeting as the root problem, not a poor work ethic among intended recipients.

A slightly different sort of labor distortion can arise when food-for-work (FFW) programs are relatively more attractive than work on recipients' own farms/businesses, either because the FFW pays immediately, or because the household considers the payoffs to the FFW project to be higher than the returns to labor on its own plots. In this case, food aid-based programs siphon productive inputs away from local private production, creating a distortion due to substitution effects, rather than the income effects on which the prior paragraph focused.

In theory, poor timing and FFW wages that are above prevailing market rates can cause negative dependency by diverting labor from local private uses, particularly if FFW obligations decrease labor on a household's own enterprises during a critical part of the production cycle (Jackson and Eade,1982; Grassroots International 1997, Lappe and Collins, 1977; Molla, 1990; Salsbury, 1992). For highly food-insecure recipients, FFW program participation may provide recipients with essential food today while hindering labor investments in future productivity, a classic case of positive dependency (humanitarian support) inextricably twinned with negative dependency.

[4] Kanbur et al. (1994), Barrett (2002a).

2. Production disincentives

Beyond – and building on – labor disincentive effects, food aid can have the unintended consequence of discouraging household-level production. If food aid lowers local food prices, that may decrease the relative payoffs to investing in one's own production. This type of disincentive impacts not only food aid recipients – who may enjoy a countervailing stimulative effect due to the increased resources at their disposal – but perhaps especially to non-recipient producers who live in or sell to areas receiving food aid flows. In theory, a producer is more at risk of facing food aid-induced disincentives the more unresponsive (i.e., inelastic) demand they face.

These disincentive effects can be short-term in nature, in which case concerns about negative dependency are minimal. The risk of triggering negative dependency looms largest when food aid has what producers expect to be a relatively permanent negative effect on product prices, or when it interrupts regular investment or maintenance cycles that maintain or enhance local agricultural productivity. The key triggers to study are thus the medium-to-long-term expected price effects and any disruptions in on-farm activities due to the method and timing of food distribution. Both of these factors are largely driven by programming variables such as targeting methods and timing of deliveries.

A vast amount of unverified anecdotal evidence suggests that food aid, in the form of FFW programs, harms local production by encouraging households to reallocate their labor away from production towards FFW. The econometric or ethnographic evidence in support of this claim is thin, however, and there are examples where the opposite seems to occur, as in the case of FFW for on-farm soil and water conservation in Tigray, northern Ethiopia, crowding in on-farm labor and private investments (Holden, Barrett and Hagos 2006), or in the case of lean season FFW projects enabling smallholders to purchase fertilizer and hire labor to increase on-farm labor effort on their own plots in Baringo District of central Kenya (Bezuneh et al., 1988).

FFW programs are often used to counter a perceived "dependency syndrome" associated with freely distributed food. Yet, evidence suggests that poorly designed FFW programs may cause more risk of harming local production than free food distribution does. Ravallion (1991) has argued that setting wages correctly will induce self-targeting of food insecure households whose time is less valuable than that of richer households. Barrett and Clay (2003) argue, however, that in structurally weak economies FFW program design is not as simple as determining the appropriate wage rate. The authors find that in rural Ethiopia higher-income households had excess labor and thus lower (not higher) value of time, therefore they allocated this labor to FFW schemes in which poorer households could not afford to participate due to labor scarcity. Bennett (2001) argues that FFW programs in Cambodia are an additional, not alternative, source of employment and that the very poor rarely participate due to labor constraints. Therefore, some targeting in addition to FFW may be necessary to reach the neediest households. Identifying who should be eligible for FFW, own-production labor requirements, expected duration of the distribution, structural factors (such as productive assets available to a household), and local wages can help determine the appropriateness of FFW and the risks of resulting negative dependency.

The claimed labor disincentive effects of food aid may reflect some misinterpretation of the relation between food aid and low productivity. Abdulai, Barrett, and Hoddinott (2005) find that a seemingly negative correlation between food aid and production does not appear to reflect any causal relationship from food aid to diminished labor inputs or on-farm

investments once one controls for targeting-related placement effects (i.e., the fact that food aid flows in response to adverse shocks).[5] Given that they are able to use repeated longitudinal observations of households, Abdulai, Barrett and Hoddinott (2005) are able to directly refute claims of negative dependency among Ethiopian farmers in their sample. Further, recent research in Kenya suggests that producers choose their crops based on long-term price trends, not on short-term fluctuations. Therefore, production changes may be more likely to occur in areas with recurrent crises with a long-term, steady stream of food aid rather than one-off events such as emergency response (Deloitte Consulting, 2005).

3. Changed consumption patterns

Part of the donor-oriented rationale for food aid has long been export promotion. Since the exports from temperate zone donors are commonly different from the staple crops grown in tropical recipient countries, the logic of export promotion necessarily entails some effort to change consumers' preferences, to introduce them to new foods and thereby endogenously stimulate demand for foods with which they were previously unfamiliar or which had formerly represented only a minor share of their diet. As Barrett and Maxwell (2005) show, however, food aid has generally failed in its trade promotion objectives.

However, food aid that is relatively inappropriate to local uses certainly can distort consumption patterns. Massive shipments of wheat and rice into the West African Sahel during the food crises of the mid-1970s and mid-1980s were widely believed to stimulate a shift in consumer demand from indigenous coarse grains (mainly millet and sorghum) to more western crops, notably wheat, although hard empirical evidence of this remains scarce, especially given how widespread the claim has become. Similarly, food aid deliveries into pastoral areas in the Horn of Africa over the past decade have been criticized repeatedly by pastoralists as having changed dietary patterns. Peoples traditionally reliant on animal products began to consume grains (primarily maize) in unprecedented quantities. Shifting from a protein-heavy to a carbohydrate-heavy diet can have unintended physiological consequences for pastoral populations (Barrett and Maxwell 2005).

A perhaps more subtle but damaging induced consumption change occurs when culturally inappropriate foods – e.g., maize to pastoralists with a strong preference for milk, meat and tea – are not consumed but instead processed into home brewed alcohol. During the 2000 drought in northern Kenya, the price of *changaa* (a locally distilled alcohol) fell significantly and consumption seems to have increased as a result, all because grain food aid inflows increased the availability of low-cost inputs to the extant, town-based informal distilling industry (Barrett and Maxwell 2005). While food aid certainly doesn't cause the emergence of local brewing nor of excessive alcohol consumption, the point is that excessive shipments of foods most recipients don't especially care to eat can have adverse, unintended consequences. Once again, poor targeting is the root source of such effects.

4. Natural resource overexploitation

Recent research suggests that patterns of food aid distribution may inadvertently affect the natural environment, by changing consumption patterns and by inducing locational

[5] In some instances, placement effects may explain the relatively poor performance of food aid in communities that are difficult to target. For example, a community that appears relatively more dependent on food aid than another may be more impoverished or it may be a more difficult site in which to implement an appropriate food aid program.

change in grazing and other activities. A pair of studies in northern Kenya find that food aid distribution seems to induce greater spatial concentration of livestock around distribution points, causing localized rangeland degradation, and that food aid provided as whole grain requires more cooking, and thus more fuelwood, stimulating local deforestation (McPeak 2003a, 2003b). The form of the food aid affects fuelwood demand, with granular maize requiring more cooking than maize meal and thus adding to the pressure on the natural resource base.

III. Meso-Level Effects

To an important degree, meso-level effects represent the aggregate of the micro-level effects over different subpopulations. But some distinct effects can emerge at meso-level as well that merit direct comment.

A. Intended Consequences

1. Market development

The main intended meso-level effect of food aid concerns market development, not in the sense of creating future commercial export markets for donors, but in the sense of helping to nurture competitive, efficient channels through which food can flow from producers to final consumers. Market-mediated food aid operations – whether on the supply-side through monetization of in kind food aid, or on the demand-side through local and regional purchases using donor cash resources – often have an explicit goal of helping to develop food marketing channels in low-income areas where markets perform rather poorly. For example, food aid sold not through large commercial grain merchants, but rather through small, village based processors and traders may help to stimulate the emergence of a competitive food distribution channel (Abdulai et al. 2004, USDA/FAS 2001). The most commonly cited example is the Indian experience with Operation Flood, 1970-95, which was instrumental in helping establish milk producers' cooperatives and promote adoption of modern dairy production and processing technologies in villages in rural India. The first phase of Operation Flood was financed by the sale within India of skimmed milk powder and butter oil donated by the European Community via the World Food Programme. Initially, the program aimed at linking India's 18 best milksheds with the milk markets of the four main cities: Delhi, Mumbai, Calcutta and Madras. By 1985 it had expanded to136 milksheds linked to more than 290 urban markets and had created a self-sustaining system of 43,000 village cooperatives covering 4.25 million milk producers.[6] The European Community food aid thus promoted enhanced value-added in upstream production, processing and direct marketing by smallholder producers, increasing their share of the profits from retail milk sales in India.

[6] In the second phase of Operation Flood, the European Community decided to use a significant portion of its dairy surplus to support the project directly, rather than indirectly through the World Food Programme. Operation Flood II was therefore funded by the National Dairy Development Board (NDDB), the government of India, the World Bank, and the European Community through food aid, and the farmer-owners of the village dairy cooperative societies (Candler and Kumar, 1998). See also Doornbos et al. (1990).

B. Unintended Consequences

1. Price Effects

Food prices almost invariably fall in local markets after food aid distribution. Food aid can drive down local (or national) food prices in at least three ways. First, monetization of food aid can flood the market, increasing supply. Second, households receiving food aid may decrease demand for the commodity received or for locally produced substitutes or, if they produce substitutes or the commodity received, they may sell more of it. Finally, recipients may sell food aid to purchase other necessities or complements, driving down prices of the food aid commodity and its substitutes, but also increasing demand for complements. Lowered prices hurt net sellers of the commodity and, if food aid deliveries are regular occurrences, can create a disincentive for them to invest in their own agricultural production activities. At the extreme, producers could lose their livelihoods due to low prices, rendering them dependent, although this seems more a hypothetical extreme outcome than something actually observed, much a less common occurence. Further, lowered prices can decrease the relative payoff to investing in agriculture, either by governments or by producers.

Several researchers find that monetization of food decreases prices (Faminow, 1995; Clay et al. 1996; Tschirley and Howard 2003). Barrett and Maxwell (2005) argue that monetizing food aid has the largest adverse effect on local market prices. To address this concern, the United States requires all agencies undertaking monetization to complete a Bellmon Analysis, which analyzes the local food situation before commencing monetization. This requirement was enacted in 1977 to keep U.S. food aid from flooding recipient markets, driving down local prices and displacing U.S. commercial food exports (USAID 1985, Ralyea, 1999). In order to be granted the right to monetize, operational agencies must demonstrate that the recipient country has adequate storage facilities and that the monetized commodity will not result in a substantial disincentive in either domestic agriculture or domestic marketing (Ralyea, 1999). While many Bellmon analyses are quite well done, others appear superficial and somewhat self-serving, throwing the credibility of this system of self-policing into question.

Price decreases may be unavoidable with respect to delivering food aid in-kind, but the magnitude of price decreases are affected by market conditions and management of the food aid operation, perhaps especially timing and targeting efficacy. The extent of any food price reduction depends heavily on how well integrated the local market is into broader regional, national and global food markets. Supply shocks associated with food aid deliveries and demand shocks associated with local purchases or cash transfers dissipate quickly in well-integrated markets, typically with only modest price effects. In poorly functioning markets segmented from broader commercial channels, however, price movement can be dramatic. Colding and Pinstrup-Andersen (2000) argue that for small open economies that are price-takers[7], the effect of food aid on prices will be limited. Lind and Jalleta (2005) found that most farmers noticed that while grain prices fall during distributions of food aid in Delanta Dawunt in Ethiopia, prices stabilized within a few weeks. However, many recipient economies are not robust and food aid inflows can cause large price decreases, decreasing producer profits, limiting producers' abilities to pay off debts and thereby diminishing both capacity and incentives to invest in improving agricultural productivity. Barrett and Maxwell (2005) describe a collapse in sorghum prices in southern Somalia in 2000, linking it, in part, to poorly timed sorghum food aid delivered to Ethiopia that then moved across the border and adversely impacted producers in southern Somalia. Tschirley, Donovan, and Weber

[7] Price-taking refers to a nation's inability to influence prices because their demand (or supply) is too small.

(1996) found that large amounts of maize food aid delivered to Mozambique caused both the yellow and white maize market prices to fall. In each of these examples, the mistiming of food aid deliveries – with food aid arriving late, as the next harvest was coming to market – is at least partly to blame for the adverse, unintended effects on market prices.

As these last cases underscore, the targeting and timing of food aid deliveries matter fundamentally to the prospective negative impacts of food aid on local food prices. Households who receive food aid will purchase less food or sell more. Food insecure households, whose capacity to purchase food prior to food aid distribution was sharply constrained, will have less of an adverse impact on market demand than will food secure households who receive aid due to poor targeting. This argument applies equally to households that are periodically food insecure, such that food aid provided during the lean season displaces little in the way of commercial purchases. Thus, poorly targeted or mistimed food aid has a greater likelihood of distorting prices at meso level.

Leach (1992), in her study of Liberian refugees in Sierra Leone during 1990-1991, finds that food aid sold by recipients lowered the price of food during the hungry season - a time of traditional food insecurity for the host community. Lowered prices benefited both food insecure households in the host community and refugee households, especially those who did not directly receive food aid. Recall that unintended consequences can be favorable. Traders of complements (e.g. soap, vegetables) also faced increased demand from aid recipients (Leach, 1992). Bezuneh et al. (1998) and Barrett et al. (2001) found that food aid distributed directly or through FFW programs to households in northern Kenya during the lean season likewise fostered increased purchase of agricultural inputs such as improved seeds, fertilizer and hired labor, thereby increasing agricultural productivity. Plainly, the product price effects of food aid deliveries do not have to generate negative dependency if operational agencies can manage the targeting and timing of distribution well. And some of the unintended consequences can be favorable.

The effects of food aid on marketing intermediaries remain largely unknown. Ravallion (1997) argues that during famines, individually rational trading behavior may worsen food insecurity. Concerns about future scarcity can cause prices to rise rapidly due to speculative holding of grain stocks, such as occurred during the 1974-1975 Bangladesh famine. The actual harvest shortfall proved much smaller than expected, but by then many poor individuals had perished in the face of a food price spike or had been forced to liquidate productive assets in order to buy food. Injecting food aid into markets may stop the rise of food prices, with the effect of buffer stock releases and other such food supply management tools propagating easily through markets for substitute foods (Barrett, 1997). Furthermore, stabilizing prices via supply increases can end trader speculation (Ravallion, 1997). However, traders are often capital constrained and may lose their livelihoods in the face of decreased profit margins due to falling prices or falling demand.

To date, there is little or no empirical research specifically examining the impact of food aid on traders. Those who sell substitute products may suffer short-term losses due to decreased demand, falling prices, or both. In principle, this could drive some out of business, although this remains an untested hypothesis. Traders of complementary goods may benefit from food aid, which allows households to make other purchases, either through the sale of aid or through freed-up income. This too remains an untested hypothesis.

Nor has there been much careful empirical research on the impact of local or regional food aid purchases in low-income markets. Such interventions can, in principle, drive up prices, potentially benefiting net sellers and market intermediaries and harming net food

purchasers. Indeed, one routinely hears stories of local traders holding speculative food stocks off the market in anticipation of upcoming foreign-funded local purchase programs, thereby inadvertently leading to price spikes in spite of adequate local food availability, although careful documentation of such effects appears absent.

The welfare impacts of any food aid-induced changes in food prices are decidedly mixed, underscoring the earlier point that it is well-nigh impossible to generate only positive, intended effects from a food aid program. This can be most easily understood by dividing a population in a food aid recipient area into subpopulations based on two criteria: whether or not they receive food aid (recipients vs. non-recipients) and whether they are net sellers or net buyers of food. Figure 2 depicts the simple two-by-two matrix that results. In Figure 2a, food aid in kind – bringing commodities into an area and thereby driving down prices – unambiguously benefits net buyer recipients, both through the direct transfer effect they enjoy as well as through the indirect benefit that arises due to lower prices for the foods they buy. Even non-recipients benefit so long as they are net buyers, because food prices are a key determinant of real incomes for the poor. Because the price they receive for their output is lower, however, net sellers are unambiguously worse off if they do not receive food aid or some other form of compensatory transfer. The welfare effects on recipient net sellers are ambiguous, depending on how the unintended, adverse price effects balance out against the intended, positive transfer effects. This simple diagram captures both the longstanding concern about unintended adverse effects on net seller farmers and the intended benefits to net food buyers, who represent the bulk of the poorest in virtually all communities.

Figure 2b reproduces the same graphic, but now showing the welfare effects of local and regional purchase operations, i.e., food aid interventions in local markets from the demand side rather than the supply side. Because this pushes out the demand curve, it can generate upward pressure on local food prices. That unambiguously hurts non-recipient net food buyers because they face higher prices for basic staples but do not enjoy any new transfers. The big winners from local and regional purchases' food price and direct transfer effects are recipient net food sellers. Indeed, net food sellers benefit no matter whether they receive food aid or not. Recipients who are net buyers may be better or worse off, depending on how price and income effects net out.

Figure 2 necessarily abstracts from important differences in timeliness of delivery and efficiency of procurement associated with local and regional purchases, each of which can dramatically affect targeting efficacy, and thus Figure 2 does not offer a full summary of all the intended and unintended welfare effects of food aid. But it does offer a useful simplification of the direct effects due exclusively to unintended, induced food price effects, as perhaps mitigated (or reinforced) by the direct transfer effects.

2. Community-level moral hazard

There exist a number of unverified anecdotes suggesting that communities alter their collective behavior in the presence of external assistance. For example, Groupe URD (2005) reports that in Afghanistan some communities stopped maintenance on public goods in anticipation of food aid payments for the same projects. Similarly, Salisbury (1992) reports that Ethiopians planted trees upside down as part of a FFW scheme, allegedly to encourage the ongoing delivery of food aid. This is a form of community-wide moral hazard. Communities opportunistically choose not to maintain public goods because they expect programs will compensate them to do so later. Lentz et al. (2005) refer to this type of moral hazard as "opportunism", defined as behavior which makes full use of external services but which does not necessarily result in long-term adverse consequences.

Participatory decision-making appears to alleviate some opportunism. Kibreab (1993), in an ethnography of Somali refugees during 1979-1989, found that opportunistic behavior was particularly prevalent among programs which treated refugees as helpless and immobilized and which, consequently, made no demands on the refugees. Agencies running programs on "purely business principles" or through community participation did not report a lack of refugee motivation.

Participatory decision-making during the assessment phase of food-for-work projects may offer insights into which public works projects are suitable and whether a community desires the project without the incentive of food aid. Communities' knowledge of a well defined time-frame for funding may also mitigate opportunism (Harvey and Lind, 2005). To date, there has been little research on such community-level phenomena.

3. Community remittances and social safety nets

Dercon and Krishnan (2003) point out that food aid may have conflicting impacts in the presence of inter-household informal insurance arrangements within a community. Food aid generates a positive income shock for recipient households, which should induce some inter-household redistribution according to a partial risk sharing model. But in so far as it reaches those with low current income draws, food aid also serves as a public transfer, thereby decreasing the need for private transfers. The empirical literature regarding the "crowding out" of private transfers by food aid, while fairly small and recent, finds that displacement of remittances may be less important than other considerations, such as price distortions.[8]

Dercon and Krishnan find evidence of partial risk sharing in communities receiving food aid and full insurance in communities without food aid. They interpret this as evidence of food aid crowding out the informal insurance on which social safety nets are based. Whereas Dercon and Krishnan appear not to have data on inter-household transfers and thus rely on a theoretical risk sharing model to determine the impact of food aid on informal insurance arrangements, Lentz and Barrett (2005) have inter-household transfers data and test directly for food aid's impact on informal, private transfers. Lentz and Barrett find that food aid receipt does not significantly impact the amount of remittances received for southern Ethiopian and northern Kenyan households during 1999-2001 (see also Abdulai et al. 2005). During covariate shocks, food aid may lessen reliance on remittances, which are better suited for idiosyncratic shocks.[9]

4. Distortion of NGO staffing and behavior

As NGOs have come to play a bigger role in food aid distribution over the past twenty years – both in handling bilateral food aid and as a partner with WFP – concerns have

[8] A related literature assesses whether public transfers in non-emergency settings leads to crowding out. Here the evidence is mixed. For example, Cox, Hansen and Jimenez (2004) find public expenditures crowd out significant proportions of private transfers in the Philippines. But a preliminary study by Gibson, Le, Olivia and Rozelle (2005) finds neither linear nor non-linear relationships between private transfers and income in four countries: Indonesia, Vietnam, Papua New Guinea, and Cambodia. The authors therefore conclude that expansions in public transfers have not crowded-out private transfers in these countries.

[9] Covariate shocks have a common effect on a group of stakeholders. For example, low rainfall hurts producers and flooding hurts coastal households. Idiosyncratic shocks are not correlated across households, such as an injury in a household. Intra-community informal sharing, lending and social safety net arrangements often suffice to cushion people against idiosyncratic shocks. But covariate shocks can overwhelm intra-community transfers systems, necessitating outside assistance.

emerged about unintended effects on NGO staffing and operations. Barrett and Maxwell (2005) document many U.S. NGOs' considerable financial reliance on food aid and how this induces natural conservativism with respect to food aid policy, as well as staffing and programming changes (e.g., hiring grain traders to handle monetization programs) that might lead to subtle but important change in organizational behavior. Food aid budgets contribute directly not only to the cost of the delivery of food commodities themselves, but also to the budgets of field offices, recurrent staff costs, and other operational costs related to project management, so-called "shared project costs", thereby acquiring influence in excess of its share of contributed resources. This may not always lead to desired, intended outcomes.

III. Macro-Level Effects

The macro level effects of food aid are somewhat less prominent today, given the pre-eminence of emergency food aid and the emphasis on individual and household level food security in programming. However, macro-level concerns were a key concern in years past, when government-to-government program food aid predominated in the global system.

A. Intended Consequences

1. Relieve balance of payments constraints

Program food aid that dominated global flows through the mid-1980s is best understood as in-kind balance of payments assistance from a donor country government to a recipient government. Program food aid was directly intended to relieve balance of payments constraints by reducing current food import costs and or the debt servicing costs associated with food imports (in the case of concessional food sales on credit). Now that the overwhelming majority of food aid flows for emergencies and through multilateral agencies or NGOs, these balance of payments effects are less explicitly intended and probably far less important.

One way in which they can still be important, however, concerns stabilizing food availability in the face of cyclical foreign exchange availability and global food market prices. Here, food aid can be a form of balance of payments insurance, provided that it flows procyclically relative to need (i.e., more food when foreign exchange becomes more scarce or food prices on world markets increase). The efficacy of food aid as insurance depends fundamentally on the predictability of food aid flows in response to shocks. At the macroeconomic level, Barrett (2001) and Barrett and Heisey (2002) find that multilateral flows from the WFP respond weakly but predictably to shocks while bilateral flows from the United States do not. At the macroeconomic level of nation states, there thus seems little reason for countries to treat food aid as proper insurance given past allocation practices.

2. Stimulate growth

At some level, the objective of all overseas development assistance, food aid included, is to stimulate wealth accumulation and economic growth in poor countries. This occurs chiefly through stimulating accumulation of productive assets – human capital being the chief asset food aid can help protect or build – and increasing the productivity of pre-existing assets. The latter effect brings us directly back to the prior question of production disincentives. While the empirical evidence is mixed regarding food aid's direct impact on household-level production, at the national level, food aid does not appear to inadvertently harm long-term domestic production (Abdulai et al. 2005, Barrett et al. 1999, Barrett, 2002c; Isenman and Singer, 1977; Lowder, 2004; Maxwell and Singer, 1979). The limited available

evidence based on studies of the dynamic effects of food aid today on food production tomorrow finds no evidence of persistent negative effects at national level (Barrett et al. 1999, Abdulai et al. 2005). The modest available evidence thus suggests that whatever adverse producer disincentives might inadvertently arise from food aid distribution are offset by the benefits of reduced smallholder liquidity constraints, improved nutrition, etc.

B. Unintended Consequences

1. Disrupting international trade

Food aid is not wholly additional to pre-existing consumption and purchases (Barrett and Maxwell, 2005; Bennett 2001), meaning there increased receipt of food in the form of food aid transfers does not increase food consumption by an equal amount. The relative additionality of food aid – what proportion of the food aid goes into added food consumption? – depends in part on local market characteristics and on the timing and targeting of food aid distributions (Dorosh et al. 2002, Barrett and Maxwell 2005). Better targeted and timed food aid leads to greater additionality because it then reaches those for whom the income elasticity of demand for food is greatest at the time when it is greatest. The greater the additionality of food aid, the less the resulting pressure on the market.

Some pressure on markets is virtually inevitable, however, due to Engel's Law: people do not increase food consumption one-for-one as their incomes increase, thus the additionality of food aid is inherently incomplete. The resulting demand-supply imbalance inevitably leads to some contemporaneous displacement of commercial sales of food in recipient economies. The evidence is unclear, however, as to the distribution of these short-term losses across domestic and foreign suppliers in recipient countries, although the evidence somewhat favors the conclusion that most of the displacement comes out of commercial imports rather than domestic production (Barrett 2002c, OECD 2003). Barrett et al. (1999) find that 1 kilogram of food aid displaces 0.3 kilograms of imports. A recent study finds somewhat higher ratios (Clay et al., 2005). Dorosh et al. (2002) argue that import disincentives will be strongest when domestic prices fall below import prices.

Whether this displacement adversely effects international food markets depends on the manner in which the food aid is obtained, how well integrated the recipient economy market is with the global market, and recipient demand for variety. Moreover, the longer-term effects of food aid turn on the dynamic income effects of food aid receipt and the extent to which these stimulate future food demand. Studies of the medium-to-long-run effects of food aid on commercial food imports suggest that imports recover after 3-5 years and increase thereafter, indicating the absence of negative dependency in terms of persistent disruption of commercial food trade due to one-off emergency shipments (Barrett et al. 1999). The evidence base is small, however.

Clay et al. (2005) find that food aid and commercial imports are complementary emergency food security responses. However, the relative inflexibility of food aid compared to cash can hinder the recovery of local economies. If targeting food insecure households limits trade displacement, as research on program versus targeted aid suggests, well-targeted emergency aid would seem to cause little lasting displacement of national trade (Lowder, 2004, Barrett and Maxwell 2005). When domestic prices fall below import prices, traders sometimes cannot afford to import food, which can threaten their viability as intermediaries and potentially disrupt future trading patterns.

2. Real exchange rates

By displacing imports, food aid reduces the amount of foreign exchange spent on food imports (Colding and Pinstrup-Andersen 2000; Maxwell, 1991). The balance of payments gains can be particularly helpful for stabilizing food availability in poor countries facing foreign exchange constraints (Barrett, 2001). But for countries with floating currencies, the real exchange rate – the relative value of the currency – can be affected by such changes in demand for foreign exchange. In principle, aid flows can have a "Dutch disease" effect, causing overvaluation of the local currency (Younger 1992). This, in turn, can hurt local producers of tradable commodities, such as food in many regions with reasonable access to international markets, depressing their competitiveness and discouraging investment in the sector, thereby fostering negative dependency. However, there has been no research to date that we can identify on food aid flows causing exchange rate overvaluation, and given the modest value of food aid flows, it seems highly unlikely that this would be a significant macroeconomic concern.

3. Disincentive to undertake necessary policy reforms

When poorly managed, food aid may enable recipient country governments to postpone inevitable and important policy reforms. Food aid is sometimes considered a crutch for governments practicing policies that discriminate against domestic agriculture, causing regular shortfalls in availability that have to then be plugged with food aid. In this view, food aid can not only fail to induce needed policy reforms, it can foster the continuation of ineffective policies, such as highly inefficient food subsidy programs underpinned by food aid shipments that benefit largely middle and upper classes (Barrett and Maxwell 2005). If food aid provides the key resource necessary to maintain an ill-conceived policy, curtailing deliveries – rather than providing food aid – may hasten necessary reforms.

Conditionalities tied to food aid distribution sometimes help provide an impetus to reform policies, especially where short-term transition costs might otherwise dissuade governments from summoning up the courage to reform failed policies (Hopkins 1984). The use of conditional food aid for pushing policy reforms depends fundamentally, however, on tangible results of the proposed reforms, and a credible exit strategy from the food aid intervention. As we discussed previously, such cases are rare and the experience of using food aid for extracting useful policy reforms from recipient country governments has generally been a failure.

4. Food as a weapon

Unfortunately, acute – as distinct from chronic – hunger often arises from conflict, as has been gruesomely evident in recent years in countries such as the Democratic Republic of Congo, Liberia, Sierra Leone, Somalia, Sudan and Uganda. As food aid has focused increasingly on emergencies over the past decade, its use in areas of conflict has therefore expanded. Although food aid is universally intended to provide relief to food insecure peoples, it has, on occasion, been inadvertently used instead as an instrument for oppression and violence (de Waal 1989, 1997, Keen 1994, Macrae and Zwi 1994, Stewart 1998, Barrett and Maxwell 2005). Food deliveries have been manipulated so as to deny disfavored populations access to food, to secure the allegiance of other populations in political contests, and to augment military food supplies. Shipments have been looted. Human populations have been cleared out of certain areas by only granting humanitarian agencies access to displaced populations somewhere else nearby, and armed combatants have been actively

hidden among refugee populations from whom fighters receive (voluntary or involuntary) assistance.

Such abuses are not so much an argument against the use of food aid as one in favor of the careful use of all forms of assistance in conflict, especially conflict in which civilians are targets of military objectives, as is frequently the case in contemporary warfare (Duffield 2001, Rieff 2002). The politicization of food aid and the confusing overlap of humanitarian, strategic and political objectives (often referred to as "coherence") has become a real concern, as has security of NGO, UN and donor agency staff, especially as food and other forms of humanitarian aid have become increasingly identified with belligerent parties in the Afghanistan and Iraq wars (Macrae and Leader 2000, Barrett and Maxwell 2005).

IV. Conclusion

The intended and unintended effects of food aid are complex and multi-layered. Food aid has both transfer effects and insurance effects at each level of analysis, from households at micro-level, through communities at meso-level, to nation states at macro-level. It is terribly important to keep these distinct, albeit inter-related, effects straight. Insurance effects include crowding out or filling in of pre-existing safety nets and moral hazard effects associated with induced changes in risk taking behaviors. There is scant evidence that food aid crowds out transfers or encourages moral hazard at any level. Without in any way denying either the theoretical legitimacy of worries about "dependency syndrome" or the relevance to a few, particular circumstances, concerns about widespread negative dependency seem generally exaggerated. Food aid flows appear typically too unpredictable and small in volume to substantially alter recipient behavior through the insurance effect.

The transfer effects of food aid may be more pronounced, especially in changing price and trade patterns because of Engel's Law: transfers in the form of food expand supply faster than they increase demand. Poor timing and poor targeting of aid exacerbate this inherent problem, often causing sharper-than-necessary price adjustments and commercial market displacement, especially of imports from the donor country and from third country suppliers.

Unintended, adverse consequences of food aid abound. Those unintended effects associated with labor and production disincentives, induced changes in recipients' food consumption and natural resources use patterns, distortion of private social safety nets or of NGO staffing and operational activities, price changes and trade displacement – for which empirical support on the universality and magnitude of effects remains thin, and often mixed – are intimately connected to programming choices and targeting efficacy. For example, food aid can harm producers when food aid drives down prices of local products and the producers are not themselved beneficiaries of food aid (or interventions based on monetization proceeds), or hurt poor net food buyers who are overlooked in food distributions based on local purchases that drive up market food prices. In both cases, inadvertent harm seems most likely when food aid arrives or is purchased at the wrong time, when food aid distribution is not especially well targeted to the most food insecure households, and when the local market is relatively poorly integrated with broader national, regional and global markets. The increased emphasis on food aid for emergencies tends to reduce these unintended consequences, although it can contribute to others associated, for example, with the use of food as a weapon.

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Figure 1: Possible Unintended Effects of Food Aid

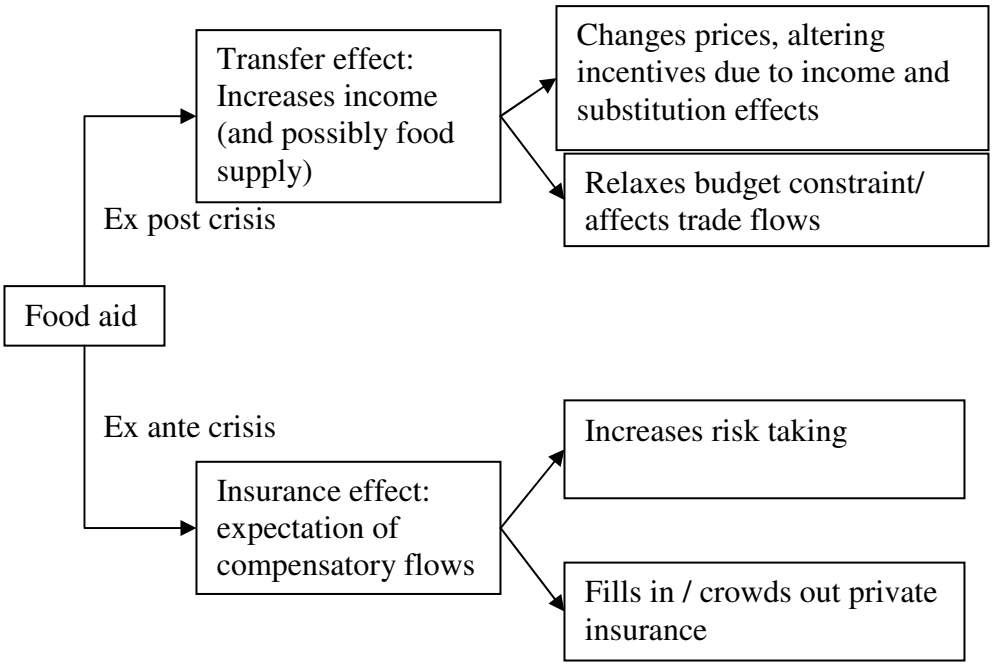

Figure 2: Welfare Effects of Food Aid Transfers and Induced Food Price Effects

2a. In Kind Food Aid Distribution

	Net Food Buyers	Net Food Sellers
Food Aid Recipients	Very positive	Ambiguous
Food Aid Non-Recipients	Positive	Negative

2b. Local or Regional Food Purchases

	Net Food Buyers	Net Food Sellers
Food Aid Recipients	Ambiguous	Very positive
Food Aid Non-Recipients	Negative	Positive

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