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In-kind transfers of maize, commercialization and household consumption in Kenya

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This article discusses in-kind food transfers and whether such transfers should be interpreted as a sign of the failure of grain markets to meet the food demands of the poor. The article elucidates on aspects of both consumption and in-kind transfers of maize against a backdrop of poorly functioning markets. It adds to the theoretical understanding of household based linkages and provides a documentation of in-kind commodity flows missing in many discussions of such linkages. The purpose of the article is twofold: first, it sheds light on the phenomenon of in-kind transfers of staple crops in the Kenyan context; secondly, it assesses the wider reciprocal and livelihood implications for the transferring households. The article relies on three sets of data with respect to methodology. It uses quantitative data collected at the household level in 2008, qualitative data collected at the village level in 2002 and 2008, as well as qualitative household level data gathered through in-depth interviews with 30 heads of household and farm managers in Western Kenya in June and July 2006. The survey found that 38% of the households transferred maize to their relatives. The explanations for in-kind transfers are not primarily related to poor price incentives, but the functioning of household support systems across space. In-kind transfers therefore at times drain the food resources of sending households while constituting important sources of food security for receiving households. While the focus in the literature is generally on rural–urban linkages, the direction of maize transfers was primarily rural-to-rural. The article concludes that existence of food transfers underpins the necessity of improving commercial incentives for maize and other foodstuffs and eliminating physical barriers to free movement of foodstuffs across the national space.

Keywords: in-kind transfers; consumption; agricultural production; Kenya; maize; households; reciprocity

Since the turn of the millennium, small-scale agriculture has increasingly been viewed as the key to broad-based development and poverty reduction in sub-Saharan Africa. The politically appealing, but somewhat vague strategy of pro-poor agricultural growth has been touted as a method for bringing smallholders above national poverty lines across the continent. A range of national, regional and global initiatives aimed at enhancing growth within the African smallholder sector have focused on promoting access to technology and inputs to raise productivity. In recent

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years, the governments of Malawi and Rwanda have successfully tackled poverty and food insecurity through agrarian based smallholder production policies.

Despite such renewed policy interest, however, commercial incentives on the demand side have in many countries failed to translate into increased productivity. Staple food markets generally are characterized by uncertainty, depressed prices, atomism and high transaction costs. These features have been identified as major causes of farmers' reluctance to adopt expensive production methods in the face of low returns from their produce.¹ The food price crisis in late 2007 and early 2008 and more recent long-term trends in rising food prices have added further sources of political anxiety as possibilities for rural net food purchasers and the urban poor to purchase cheaply imported food have dwindled. Strategies of increasing imports to feed the African population have, in this context, at least been temporarily reconsidered.² The role of domestic, market-oriented production is therefore increasingly viewed as a necessity in terms of improving food security in sub-Saharan Africa.

Such global changes need to be linked to future demographic challenges in Africa, as the continent's population becomes increasingly urbanized. The United Nation's *World Urbanization Prospects* predicts that 60 per cent of Africa's population will be living in urban areas by 2050.³ The diversification of incomes by smallholder households from agriculture both *in situ* and through migration has seen livelihoods increasingly operate across space in what is known as multi-spatial livelihoods.⁴ One aspect of such livelihoods is food transfers between household members that reside in different places. Such transfers operate outside the confines of the market and are therefore invisible in estimates of urban food availability. They nonetheless constitute an important aspect in both urban and rural households' access to food, while they may also be reflective of the inability of some segments of the population in accessing food through the market.

Recent household data from a number of African countries suggest that smallholders are engaged in in-kind transfers which in effect bypass ordinary market channels.⁵ This widens not only the subsistence responsibilities of farm households, both spatially and numerically, but also possibly signals the malfunctioning of markets. In this context, this article attempts to answer the question of whether in-kind food transfers should be interpreted as a sign of the failure of grain markets to meet the food demands of the poor. In-kind transfers would by this account indicate a degree of disengagement from the market among both sending and receiving households. If viewed instead as expressions of multi-spatial livelihoods, food transfers may be a method of extending the consumption arrangements of the household over space, possibly to protect family members outside the agrarian production unit from the instabilities of the market.

Maize is Africa's largest contemporary staple crop and for this reason is a crucial crop to study in the context of agricultural market development in Africa in general. Maize markets have also been the subject of renewed policy interest in the wake of rising global food prices. Maize is a relatively non-perishable, weight-efficient crop, and is therefore possible to transport over long distances and as such can be used for transfers across space.

The purpose of this article is twofold: first, and at a general level, it intends to shed light on the phenomenon of in-kind transfers of staple crops in the Kenyan context. This is done through discussing the role of maize transfers and

their connection to commercial incentives. Secondly, the article assesses the wider reciprocal and livelihood implications for the transferring households.

In respect to methodology the article draws on both quantitative and qualitative data. Quantitative survey data was collected from 180 households in six Kenyan villages in early 2008 as part of a larger survey of farm households in nine countries in the African maize and cassava belt. This data is used to quantify and document the phenomenon of in-kind transfers of maize. Further, in-depth interviews with 30 household heads were carried out in two villages in Lugari District, Western Kenya, in July 2006. The data from these interviews is used to analyse the purpose of such transfers. These sources of data are complemented by community-level field work using focus group discussions and key informant interviews, carried out in 2002 and 2008 respectively.

Conceptual framework

An understanding of in-kind food transfers needs to be framed by a consideration of the characteristics specific to African food markets and the wider production and family environments in which these markets operate. Moreover, a broader theoretical view of systems of provisioning documented both within and outside Africa is useful in analysing food transfers.

The problems of African grain markets and producer incentives in African smallholder agriculture are in large part connected to insecurity and volatility. Unstable and until recently depressed prices, both seasonally and between years, provide poor incentives for producers. Poor producer incentives translate into poor consumer confidence, leading to households' reluctance to rely on the market as a source of food. The result is a large degree of self-provisioning, providing only marginal marketable surplus both at the household and the national levels. Poor infrastructure and lack of market coordination result in high transaction costs and the inability to even out regional imbalances in production across national markets.⁶ In this context, non-market-based transfers may be an expression of market failures both for consumers and producers. Using food as gifts may make more sense if the alternative is to sell commodities at low prices. On the part of the recipient, relying on the market for food may to some extent be avoided through in-kind transfers.

The field of new institutional economics and the sub-field of transaction cost economics provide insights into how social institutions develop in response to market failures.⁷ Nonetheless, this literature generally concerns the functioning of firms and organizations, rather than social or kin-based networks. Perspectives related to gifts and gift economies are therefore perhaps more relevant to an African setting than studies of transaction cost economics.

Non-market-based transfers have been documented and conceptualized since the classical works of Mauss and Bourdieu,⁸ resulting in a number of studies within the subfield of economic anthropology. Such analyses have sought to document the respective roles of exchange versus markets,⁹ gifts versus commodities,¹⁰ as well as various types of reciprocity.¹¹ As suggested by Guyer's review of the classical anthropological literature on Africa,¹² the focus in such studies was generally on social relations, rather than production and commodity flows. In this context the difficulties of quantitatively capturing food sharing arrangements among households has been noted in the literature.¹³

Studies from outside Africa provide interesting pointers in this context, but again depict the manoeuvring of networks, rather than providing a detailed deconstruction of personalized relations of production and consumption within such networks. Ledeneva shows how provisioning in the former Soviet Union and China and personalized systems of exchange outside the household were used to counteract shortages of both food and other commodities,¹⁴ but does not detail such commodity flows.

Studies of rural–urban household linkages in sub-Saharan Africa suffer less from these shortcomings, as they aim to also document monetary flows and, especially, investments. The literature in this field points to the wide variety of household constellations that exist across Africa.¹⁵ The notion that most households operate within a family based network of wider social and economic relations, which in many cases cuts across different spatial categories, is a welcome addition to studies of African livelihoods. The documentation of monetary flows among members of such networks and the linkages between rural and urban areas through different types of household arrangements has likewise provided invaluable perspectives on how households operate in the context of the demographic changes outlined above.¹⁶ Family based networks may in many cases compensate for missing welfare functions. Remittances between household and family members may in part be connected to historical patterns of migration and food provisioning across space.¹⁷

Nonetheless, two perspectives are missing in most of the recent studies of household based linkages. Firstly, in the context of agrarian studies especially, the traditional focus on production may be occurring at the expense of an interest in *consumption-based linkages*. However, production behaviour may, in the context of agrarian systems that rely a great deal on self-provisioning, be framed by the implicit unit of consumption as much as that of production. Secondly, given a history of in-kind transactions and more recent evidence of savings in physical forms and in-kind payments,¹⁸ the in-kind perspective is a relevant addition to studies of such linkages. This article therefore considers aspects of both consumption and in-kind perspectives against the backdrop of poorly functioning markets. In this respect, it adds to the theoretical understanding of household based linkages and provides a documentation of in-kind commodity flows that are missing in discussions of such linkages. The market perspective, however, remains a necessary background, not least in policy terms. Much political energy is expended on encouraging smallholder production for the market – situating the production behaviour of smallholders in relation to their wider consumption responsibilities can provide insights relevant to policies which seek to encourage growth within the sector.

Methodology and study site description

This article relies on three sets of data in respect to the methodology. We have quantitative data collected at the household level in 2008, qualitative data collected at the village level in 2002 and 2008,¹⁹ as well as qualitative household level data gathered through in-depth interviews with 30 heads of household and farm managers in June and July 2006.

The *quantitative data* used to treat the research questions is part of a larger survey of farm households in nine countries in the African maize and cassava belts, conducted in 2008 and presented in detail in Djurfeldt et al.²⁰ The 2008 data

collection was a follow-up on interviews carried out in 2002 as part of a project on African agricultural intensification reported elsewhere.²¹

Qualitative data was also collected in the sampled villages. At the community level a range of focus group discussions and key informant interviews were carried out in 2002 and 2008. In addition, two villages – Mukuyu and Munyuki in Western Kenya – were selected for an in-depth study of household based maize circulation in 2006.²² The villages were selected since the possibility of studying family based transfers of maize was deemed to be good, as the villages are located in areas of surplus maize production. Thirty households (15 in each village) that had been part of the 2002 study were randomly sampled and interviewed in depth in June and July 2006. Interviews aimed to document the various uses of maize. This includes home consumption, sale, speculation, in-kind transfers within households, payment for labour and other services, food and gifts. In most cases the household head was interviewed, in others – especially in the case of *de facto* female headed households – the farm manager was interviewed. The team consisted of two senior researchers and one research assistant, aided by the village elder (*likulu*) in each village.

Quantitative sampling and data description

For the quantitative survey, 300 households were sampled in 10 villages in two districts, Nyeri and Kakamega. The purpose of the larger survey was to analyse the drivers of smallholder staple crop production in the villages in question.²³ Questions in the surveys focused mainly on production strategies, technology used and marketing techniques among households in 2002 and 2008. In the 2008 data collection round, perspectives of in-kind transfers of staple products were included in the survey, and a set of questions was added to the household survey in 2008 to cover food transfers and rural–urban linkages. Information was gathered on the annual amount of maize, sorghum, millet and rice sent to relatives, as well as the amounts of these crops that were collected by relatives themselves. In the presentation below, these amounts have been grouped together and are collectively discussed as in-kind transfers.²⁴

Village sampling followed a multi-stage purposive sampling design. Original sampling aimed at shedding light on the possibilities of intensified smallholder agricultural production in Africa as a whole. Data was collected in nine countries in the African maize and cassava belt. Since the purpose of the project was to analyse intensification potential, countries as well as regions within countries were purposively sampled in areas that were deemed to be above average in terms of ecological potential and market access, but excluding the most vibrant local rural economies. Given this overarching criterion at the national level, sites within countries were sampled to provide variety in terms of agricultural and economic dynamism. In the case of Kenya, two regions, Nyeri and Kakamega were purposively sampled, the latter representing the less dynamic region in commercial terms. A total of 10 villages were sampled.

Six Kenyan villages – one in Nyeri District (1992 boundaries, in Central Kenya) and five in Kakamega District (1992 boundaries, in Western Kenya) – are covered in this article, since in-kind transfers of maize were occurring in these villages. The sampled village in Nyeri (Gatondo/Thegenge) is very well endowed agro-ecologically and has very good market access. The high road density and the

proximity to a major market (Karatina), which is well linked to other important urban markets, distinguish the village in terms of favourable market access.

The villages in Kakamega (Western Kenya) were selected on the basis of having different agro-ecological potential, market access and population density. Shikomoli village was chosen to represent an area with very high population density (hence very small farm sizes); relatively poor agro-ecological potential (the village is rocky and hilly with poorly developed soils) and average market access. Ekero village was chosen to represent a village in Western Kenya with a relatively good market access. The village has all weather roads maintained by Mumias Sugar Company. The village is also served by the Mumias–Kakamega tarmac road. Ekero village provides an example of an out-grower scheme in sugar where farmers grow maize for subsistence. Chegulo village was chosen to represent an interior, sometimes inaccessible village, but one with medium agro-ecological potential and some small-scale irrigation.

In each village households were sampled randomly, the sample therefore is representative at the village level. The use of the household as a unit for data collection is in some respects problematic, since it presumes that decision making and control of resources is made on a household basis. Further, it obscures intra-household dynamics.²⁵ Nonetheless, it also has advantages, especially in terms of cross-country comparability. The household, as defined by residence, was therefore used as the data collection unit for the quantitative study, with interviews carried out with the household head or farm manager.

Qualitative study site description

Munyuki and Mukuyu villages in Lugari District (broken out of Kakamega District in 1998) were selected for the in-depth, qualitative study. The landholding structure in the two villages varies, with average land sizes being larger in Mukuyu than Munyuki, with 1.5 and 1.1 hectares per household respectively. Munyuki has less available land than Mukuyu, with the land exhausted in 2002.²⁶ Land distribution was relatively equal in 2002, with the gini coefficient for land distribution being 0.34 for Munyuki and 0.27 for Mukuyu. By 2008, however, land distribution had become more unequal in both villages, increasing slightly to 0.36 in Munyuki and more dramatically to 0.39 in Mukuyu. Soil fertility is good and average annual rainfall is relatively abundant, ranging from 1200 to 1400 mm annually. Both villages are located in the agro-ecological zone UM4.²⁷ Nonetheless, rainfall was reported to be decreasing over time, with lacking precipitation being considered a constraint to agricultural production as early as 2002.²⁸

Maize dominates the cropping patterns in both villages, with all households (N = 60) growing maize in 2002. By 2008 this figure had fallen to 93% in Munyuki and 97% in Mukuyu. By contrast the number of households who grew cassava had doubled since 2002, with 53% and 47% of the households having planted cassava in 2008. Cropping patterns are based mainly on maize in combination with beans and sweet potatoes and to a lesser extent vegetables. Like in the rest of the country tubers and potatoes constitute an important complement, but serve primarily as “consumption absorber” crops in relation to maize.²⁹

With respect to tenure arrangements, private freehold tenure is predominant. Both villages consist of settlement schemes that were part of the Million Acre Settlement Scheme of the early 1960s. Traditionally a community of Abaluhya

sub-tribes have dominated Lugari District in terms of ethnic composition of the District population. The Abaluhya supra-ethnic group consists of a number of relatively loosely connected sub-ethnic groups united by closely related dialects and common customs.³⁰ Since the mid-1970s, in-migration from the Central and Rift Valley provinces has changed the ethnic structure of the District population. Relatively large numbers of the sub-ethnic group of Maragoli have also moved from the densely populated neighbouring district of Vihiga. The creation of land buying companies among in-migrants has enabled land acquisition by migrants in the two villages.³¹ Although freehold tenure exists, the land tenure system in practice discriminates against women in terms of acquisition, ownership and inheritance of land. This is because custom requires that land ownership is vested in men.³²

Cash income composition reveals a slightly more diversified agrarian income base in Munyuki than in Mukuyu. Cash income patterns in Mukuyu, where 27 households reported earning cash income, have a stronger slant towards non-farm incomes, with 19% of cash income consisting of remittances and pensions and an additional 6% being sourced from salaried non-farm employment. Differences in the vibrancy of the local agrarian economies are reflected also in terms of markets and general accessibility. The markets of Lumakhanda and Kipkarren River provide Munyuki with fairly good market accessibility, whereas Mukuyu has poor market access.

The Kenyan maize market

Maize dominates the Kenyan smallholder food economy, both as its most important staple food but also as a cash crop for many households. Regionally, the Rift Valley, Western and Nyanza provinces constitute the maize surplus areas. Until the mid-1980s the National Cereals and Produce Board (NCPB) regulated the maize market both in terms of price and movement control while providing a marketing and purchasing structure for smallholders. Since deregulation, the role of the NCPB has been recast as that of a strategic food reserve agency and private market participation has grown significantly. Nonetheless, as the largest individual actor in the maize market, the NCPB affects prices and food availability through its purchasing power, its influence over import levels (and the subsequent pricing of imports in the domestic market) as well as its dominance over storage infrastructure.³³

Although maize production is dominated by smallholder farmers, maize markets are highly concentrated. The NCPB on average accounts for around 25–30% of maize purchases, but the bulk of this maize is sourced directly from large-scale farmers. Small-scale farmers followed in a survey, carried out by Tegemeo Institute of Agricultural Policy and Development of Egerton University/Michigan State University between 1996/1997 and 2003/2004, sold 96% of their maize either to private traders/brokers or directly to consuming households. Only 4% of smallholder maize was sold to the NCPB.³⁴ Although market participation had increased from 35 to 49%, the amounts marketed had declined, with average proportion of production sold being around 45% per household.³⁵

Despite a largely unimodal structure of land access, farm sizes within the smallholder sector vary considerably, while the land/agricultural population ratio has fallen consistently since the 1960s, to reach 0.229, or around half of its original value by 2000.³⁶ Like in many other countries in Eastern and Southern Africa,

farmers and consumers fail to benefit from large variations in cereal production at the regional level due to lack of infrastructure and limited coordination.³⁷ Moreover, at the sub-regional level, considerable variability exists among smallholders in the same agro-ecological regions, pointing to the crucial role of supply side measures as a source of yield differentials. Such variability is also echoed with respect to the commercial foothold of smallholders within staple markets. More than half (55%) of the rural small-scale farm population is forced to buy some of its maize requirements.³⁸ Given the instability of prices of maize in the market, especially in the lean season, self-provisioning of food staples remains an attractive option. This holds even for those households in Central Kenya who have been able to exploit the growing demand for horticultural produce.³⁹

Results and discussion

Production systems and income composition in the villages

In many respects the sampled population reflects the national patterns described above. Land sizes are small and although maize dominates crop portfolios in terms of food, production patterns are relatively diverse. Female headed households are in the minority varying from 10% of the total sample population in Gatondo to 23% in Chegulo, Ekeru and Mukuyu. Land sizes vary considerably in the sample, from an average of half a hectare in Shikomoli to nearly three hectares in Gatondo. Due to the difficulties in estimating land sizes, these figures have been treated with caution.

Although a variety of staples is grown in the villages and the dependence upon various staples as sources of food and income varies among the villages, maize is the most commonly grown staple crop in all the villages. Out of a total sample size of 180, 172 farmers produced maize during the last season. Sweet potatoes constitute an important supplement to maize in dietary patterns in all the villages. They have a complementary role in relation to the maize production cycle as they are planted on the maize field to be harvested later. Relatively drought resistant, sweet potatoes also have the advantage of keeping in the ground for up to six months. Sweet potatoes were grown by between 80 and 93% of the sampled farmers, except in Gatondo village, where 57% grew the crop. Irish potatoes were in the latter case grown by 93% of the farmers in this village, suggesting the possible substitution between the two types of potato. Irish potatoes were grown only in a limited number of cases in the other villages. Cassava was the second most important complement to maize in all villages except in Gatondo/Thegenge, where agro-ecological conditions are unsuitable for cassava.

Nonetheless, as suggested both by national statistics and the sample population, maize in terms of frequency, remains the most important crop in the villages in question. Technology use and input intensity in maize production vary considerably among the villages, regardless of the production patterns. The share of farmers using hybrid maize varieties is near universal (ranging from 87 to 97%) throughout the sample, except for in Shikomoli (33%), which also has the smallest share of fertilizer users, and the lowest expenditure levels among users of chemical fertilizers. The use of chemical fertilizers varies more dramatically among the villages – from an average of 47% in Shikomoli to 87% in Mukuyu and Munyuki. The differences in average fertilizer expenditure are even more striking: from US\$7 in Shikomoli to

Table 1. Mean and median annual maize production (kg) per household, three year average 2006–08, by village.

Village	Mean	Median	Producers (N)
Chegulo	1111	743	28
Ekeru	337	270	28
Gatondo/Thegenge	181	130	30
Mukuyu	2478	2070	29
Munyuki	2006	1515	28
Shikomoli	123	75	29

Source: Own survey data, 2008.

US\$167 in Mukuyu for the most recent production season. However, such differences may in part reflect local variations in fertilizer prices rather than amounts used.

Variations in technology use are to some extent reflected in production levels. Production levels among the sampled farmers are generally low, although they vary considerably among the villages in question (see Table 1). Mukuyu, Munyuki and Chegulo lie in the heartland of Kenya's Western maize dominated area and contribute the bulk of the maize produced by the sample. In part, low production figures may be explained by the post-electoral violence which plagued the countryside in many parts of Kenya in early 2008.

In terms of income sources, the maize dominated areas of Western Kenya rely more on staple sales and incoming remittances than do the villages outside the maize belt, where sale of cash crops is a more important source of cash income. Divergent patterns of income sources are likely to explain at least some of the differences in the use of modern farm technology.

In villages where maize takes on the dual role of cash and food crop, investments in farm technology related to maize would be expected to be more forthcoming than in villages where maize is used only for subsistence. Even in these villages, however, the sale of other food crops constitutes one of the most important sources of cash income accounting for nearly half (42%) of average cash income for the households in Munyuki and a fifth of total household income in Mukuyu.

Maize transfers

In spite of large differences in production and income portfolios, the number of maize transferring households in each village only varies between one-third and one-half of the farmers, with the exception of Gatondo/Thegenge, where only two out of the 30 households transferred maize to their relatives. However, the average size of maize transfers is clearly higher in the two villages in Western Kenya, Mukuyu and Munyuki (see Table 2). In total 69 households, or 38% of households, transferred maize to their relatives.

Out of the 69 households that transferred maize, roughly a quarter also transferred cassava while more than half of the households also sent food stuffs other than maize, cassava, sorghum or rice.

The shares of maize transferred from the households are inversely proportional to total production; that is, the transferred share is smaller for larger producers,

Table 2. Mean annual in kind transfer of maize per household, by village.

Village	Transfers (kg)	N
Chegulo	115	15
Ekeru	70	14
Gatondo/Thegenge	60	2
Mukuyu	257	15
Munyuki	215	10
Shikomoli	32	13
Total	749	69

Source: Own survey data, 2008.

although the amount is higher. In the lowest production quartile, as much as 37% of total household maize production is transferred to relatives outside the co-resident household (see Table 3).

In-kind transfers and maize markets

The focus on agriculture as the engine of comprehensive economic growth in the context of sub-Saharan Africa is often placed on commercialization. For this reason the connection between in-kind uses of maize and sale of maize is especially interesting. Whether individual farmers' commercial incentives are affected by obligations to transfer maize and how such incentives vary with the local market structure, is in this context relevant to a wider discussion of farmer market behaviour. Poorly developed markets and lack of producer incentives may provide an explanation as to why in-kind transfers and a focus on social networks may be an understandable alternative to formal commercial transactions, at least theoretically, as investment in social relations are thought to constitute substitutes for market participation.⁴⁰

A look at a variety of indicators reflecting local market development since 2002 paints an equally bleak picture both for those households that transferred maize as well as for those that did not. Only one household reported having increased maize sales since 2002, while as little as a tenth of the sample considered prices or market accessibility to have improved during the past five years.

Despite such indications of declining or stagnant marketing possibilities for maize over time, the data, both quantitative and qualitative, point in directions that

Table 3. Mean annual household maize production and in kind maize transfer by production quartile.

	Production (kg)	Transferred (kg)	Proportion transferred (%)	N
Production Quartile 1	75	26	38	12
Production Quartile 2	242	47	23	16
Production Quartile 3	649	101	16	21
Production Quartile 4	2268	304	13	20
Total	924	134	21	69

Source: Own survey data, 2008.

suggest that explanations of in-kind transfers are not primarily related to poor price incentives for maize producers. When running a bivariate correlation between sale and remittances, Pearson's r is positive (0.270), and significant at the 0.01 level, suggesting that transfers and sales are not mutually exclusive. If transfers were affecting the commercial participation of households, the relationship would be expected to be negative. Instead, both the amount transferred and the amount sold is correlated to total household production. Among the transferring households ($N = 69$), the correlation between the amounts produced and transferred is striking (Pearson's $r = 0.71$, significant at the 0.01 level), suggesting that in-kind transfers should be viewed as an expression of household subsistence obligations found within the context of kinship mechanisms – that is, surplus production is transferred for consumption elsewhere rather than sold.

This notion also is reinforced by the income composition for households that transferred maize. Their total cash income is predominantly non-staple based, with 55 of these households having cash incomes that were not dominated by staple sales. This again underscores the role of maize as a crop grown mainly for own consumption, rather than sale. Therefore, under the circumstances, transfers may represent a mechanism for counteracting food shortages, price shocks and volatility for receiving households under a system in which markets cannot be trusted to deliver, or do so at seasonally inflated prices.

Household consumption

Further support for this interpretation is provided both by the quantitative data as well as the qualitative interview material. The quantitative data indicates clearly that in-kind transfers are draining the food resources of sending households. When the amounts transferred are taken into account, production per consumption unit is far below the FAO annual consumption norm of 117 kg of maize per adult (see Table 4).⁴¹ Thus, households that transfer maize appear to be forfeiting the consumption needs of the co-resident household members.

Table 4. Food security measures of households engaged in in kind transfers of maize by production quartile (annual mean production per consumption unit, including and excluding in kind maize transfers and mean number of meals eaten during lean season).

	Household CU 2008	Production (kg)	Production per CU (kg)	Amount transferred (kg)	Production per CU, excluding transfers	Number of meals eaten during lean season
Production Quartile 1	5.73	75	13	28	8	2.3
Production Quartile 2	5.48	242	44	48	35	2.6
Production Quartile 3	6.79	649	96	101	81	2.7
Production Quartile 4	6.20	2268	366	304	317	2.7

Source: Own survey data, 2008.

Other staple crops produced by households need to be considered as potential sources of food for the co-resident household. Out of the transferring households, only one household (in the first production quartile) was entirely dependent on maize as the sole staple of the household. To some extent, therefore, households may be compensating for their lower self-sufficiency in terms of maize consumption through the cultivation of other staple crops. The figures on the average number of meals eaten by the household during the lean season verify the consumption of other staples alongside maize, but nonetheless point primarily to the precarious food security situation in all production quartiles.

The mechanisms behind in-kind transfers were detailed in the qualitative data. In-kind transfers to relatives in other rural maize deficit areas constituted an important source of food security for the receiving households. The practice was for relatives from areas characterized by land and production shortages to collect maize when it was harvested. The slight variations in production cycles between the areas therefore provided a countercyclical buffer function in terms of food security. Transfers appeared to act as a parallel informal system of social security in the absence of formal systems guaranteeing a certain measure of food security for vulnerable households. Numerous households attested to this practice, where reciprocity appeared to be limited, mainly consisting of token amounts of cash or food.

Food transfers in kind, therefore, act primarily as a redistributive mechanism for less food-secure or poorer relatives outside the co-resident household. In this sense, respondents viewed household consumption as multi-spatial, occurring outside as well as within the unit of production. Many respondents also commented on the difficulties in accounting for in-kind transfers, since consumption within and outside the unit of production were not generally differentiated by the households. Relatives, either invited or uninvited, would come to collect maize following the harvest or more regularly collect food when needed. Accounting for urban transfers of maize was easier, since respondents in these cases most often set aside food for their urban relatives who visited the villages much less frequently.

The case of Mr Kamba (Box 1), illustrates both the countercyclical as well as the redistributive functions of in-kind transfers.

Box 1. The case of Mr Kamba

Mr Kamba migrated from Vihiga District because of the land shortage there. The household consists of him, his wife and their four children, but two of his children are at school in Mombasa, while the elder girl schools locally. He has a plot of a total of 20 acres, but only has 10 of them under maize. Mr Kamba is one of the most successful farmers in the village and last year harvested around 10.8 tonnes of dry maize. He finds the gifts of maize are very hard to account for. He will send his relatives in Vihiga (his father-in-law and his sister-in-law) maize twice a year. He uses around four bags of maize as gifts in an average year. He sends them to Vihiga by matatu. During the harvest season he receives around 50 relatives and the amount he will give to them depends on how close they are, he prioritizes his in-laws. His relatives come from Vihiga to collect maize and use it for their own consumption. He suspects, however, that some unscrupulous relatives are asking around for maize from a number of people, claiming that they need it for consumption, but may in fact be selling it.

In addition to maize he also sends other products depending on what is in season: vegetables and cabbages (around half a bag at a time), sweet potatoes. He instructs the matatu driver where to take it. In turn his relatives will distribute what they receive from him to other relatives, friends and neighbours in Vihiga. He rarely receives other products from his relatives, but if he does he will receive sugar, tea leaves, rice and bread. They will be brought by his in-laws.

As suggested by the case of Mr Kamba, reciprocity was not pronounced. Also the quantitative data confirm this at least in terms of cash remittances: households who were engaged in in-kind transfers to a lesser degree (48%) received incoming cash remittances than households that were not transferring maize. In this sense, food transfers appear to be primarily redistributive rather than reciprocal arrangements, intended to raise cash for the rural household.

From a developmental point of view, in-kind maize transfers which bypass ordinary market channels may hold important food security implications for family members outside the village, constrained either by land or income. In this sense, in-kind transfers enable a degree of disengagement from a market characterized by seasonality and insularity. Survey data, as well as a wealth of evidence from Kenya and numerous other African countries, show that smallholders sell maize immediately following the harvest to cover the most pressing cash needs of the household, only to be forced to later buy maize for their own consumption at prices elevated by short supplies.⁴²

Direction of transfers

A large body of literature on Africa describes and analyses the role of urban cash remittances to rural livelihoods, pointing to the traditional connection between rural and urban areas.⁴³ In Kenya, rapid urbanization and rising urban poverty in the context of declining per capita growth during the 1990s have to some extent levelled differences between rural and urban areas in terms of poverty levels (standing at 49% and 53% respectively in 1997, the latest available figures as reported by the World Bank),⁴⁴ and in the process reconstituted the relationship between rural and urban areas. Urban recession has led not only to rural return migration, but also to declining remittances from urban to rural areas and growing transfers of food from rural to urban areas through own production in rural areas by urban households.⁴⁵ To some extent, such tendencies are reflected in the sample data, with more than half (54%) of the transferring households sending maize to towns outside the district and nearly a third (28%) to Nairobi, despite the relatively long distance to the capital.

Less interest has been placed on rural-to-rural linkages in the literature. Both the quantitative as well as the qualitative data suggest that in-kind transfers are primarily directed to rural relatives, especially in surrounding rural areas. Indeed, a large majority (82%) of the transferring households reported that maize was being sent or collected by relatives in neighbouring villages and an additional 72% to relatives in other rural areas. Importantly, the quantitative data does not detail the amounts transferred to each destination, only the number of destinations, so an analysis of flows across space is not possible. The spatial reach and subsistence burden of the household is underestimated if remittances are not taken into consideration. Remittances in this regard even out the differences between deficit

and relative surplus areas, but also exist as a result of poor production potential in surrounding rural areas. Cultural aspects of remittances may also help explain why households spread their remittances thinly among a number of destinations.

Conclusions

The in-kind perspective adds important dimensions to studies of rural livelihoods, not only in Kenya, but throughout developing countries, where the subsistence role of farming is still pronounced and the functioning of households across space is widespread. Consumption that stretches across space is invisible in surveys that do not consider the in-kind perspective, which may lead to underestimation of the consumption burdens of sending households. It may also undervalue the role of incoming food transfers to both urban and rural households. The qualitative data suggested that such spatialized consumption is considered part of the co-resident households' own food consumption – transfers were difficult to account for. At a basic level, survey instruments need to be carefully constructed to also take into consideration the in-kind perspective. This perspective presents an important opportunity for recalculating and reassessing measurements traditionally used to assess agricultural productivity, such as consumer-worker ratios and dependency ratios.

Comparing the unit of production to that of consumption adds insights not only into the functioning of the multi-spatial household, but may also shed light on how consumption that occurs outside the production unit affects the production behaviour of rural households. At the level above the household, failure to consider in-kind food remittances may lead to underestimation of the importance of smallholder based agriculture in relation to subsistence based urban food security. The role of subsistence agriculture to urban livelihoods may in this way be underestimated since such remittances are not directly visible in market transactions. Finally, the existence of food transfers suggests the necessity of improving the commercial incentives for maize and eliminating the physical barriers to the free movement of maize across the national space.

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Notes

1. Jayne, Mather, and Mghenyi, "Smallholder Farming"; Poulton, Kydd, and Dorward, "Overcoming Market Constraints"; Kirimi et al., "A Farm Gate-to-Consumer."
2. See Wood, "Could Africa"; Ellis, "Small Farms, Livelihood Diversification."
3. United Nations, *World Urbanization Prospects*.
4. See Haggblade, Hazell, and Reardon, *Transforming the Rural Nonfarm Economy*; Bryceson, "De-Agrarianisation in Sub-Saharan Africa"; Bryceson, "African Rural Labour"; Bryceson "The Scramble in Africa"; Andersson, *The Bright Lights*; de Haas, "Migration, Remittances"; Foeken and Uwuour, "Farming as a Livelihood"; Foeken and Uwuour, "Multi-Spatial Livelihoods."

5. Data has been collected simultaneously in nine African countries: Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Tanzania, Uganda and Zambia, covering a total of 4000 households.
6. Kirimi et al., "A Farm Gate-to-Consumer"; Dorward et al., "A Policy Agenda"; Fafchamps and Minten "Property Rights."
7. Ensminger, *Making a Market*; Ensminger, "Transaction Costs through Time"; North, *Institutions, Institutional Change*; Coase, "The Nature of the Firm"; Coase, "The Problem of Social Costs"; Acheson "Transaction Cost Economics."
8. Mauss, *The Gift*; Bourdieu, *Outline of a Theory*.
9. Bohannan, *Social Anthropology*; Polanyi, *Trade and Market*.
10. Gregory, *Gifts and Commodities*.
11. Sahlins, "The Sociology of Primitive Exchange"; Sahlins, *Stone Age Economics*.
12. Guyer, "Household and Community in African Studies."
13. See Guyer, *Marginal Gains*.
14. Ledeneva, "Blat and Guanxi: Informal Practices"; Ledeneva, *Russia's Economy*.
15. Adepoju, *Family, Population and Development*; Guyer, "Household and Community in African Studies"; Yaro "Is Deagrarianisation Real?"
16. See Andersson, *The Bright Lights*; de Haas, "Migration, Remittances"; Baker, *Rural–Urban Dynamics*, Baker, "Survival and Accumulation"; Baker and Pedersen, *The Rural–Urban Interface*; Foeken and Uwuour, "Farming as a Livelihood"; Foeken and Uwuour, "Multi-Spatial Livelihoods."
17. Stichter, *Migrant Labour in Kenya*; Van Onselen, *Chibaro*; Wolpe, "Capitalism and Cheap Labour"; Bryceson, "A Century of Food"; Guyer, *Feeding African Cities*.
18. Aryeetey, "Household Asset Choice"; Guyer, *Marginal Gains*.
19. Karugia, "A Micro Level Analysis."
20. Djurfeldt, Aryeetey, and Isinika, *African Smallholders*.
21. Djurfeldt et al., *The African Food Crisis*.
22. Andersson and Wambugu, "Maize Circulation."
23. Andersson et al., "A New Era for Sub-Saharan African Agriculture?"
24. Andersson, "Maize Remittances, Smallholder Livelihoods"; Andersson, "Maize Remittances, Market Participation."
25. Chant, *Women-Headed Households*; Guyer, "Household and Community"; Udry "Agricultural Production."
26. Karugia, "A Micro Level Analysis."
27. Ibid.; Jaetzold and Schmidt, *Farm Mangement Handbook*; Kenya, *Lugari District Poverty Reduction*.
28. Karugia, "A Micro Level Analysis."
29. Kirimi et al. "A Farm Gate-to-Consumer."
30. Curtis, *Opportunity and Obligation*; Gwako, "Property Rights."
31. Andersson and Wambugu, "Maize Circulation."
32. Karugia, "A Micro Level Analysis."
33. Jayne, Zulu, and Nijhoff, "Stabilizing Food Markets."
34. Kirimi et al., "A Farm Gate-to-Consumer", 16–18.
35. Ibid., 29.
36. Jayne, Mather, and Mghenyi, "Smallholder Farming."
37. Alene et al., "Smallholder Market."
38. Jayne, Zulu, and Nijhoff, "Stabilizing Food Markets."
39. Jayne, Mather, and Mghenyi, "Smallholder Farming."
40. See Berry, "Social Institutions."
41. A consumption unit takes into consideration the age composition of the household. Adult household members (aged 16–60) are given a value of one, whereas children (15 and below) are given a value of 0.50 and older household members (61 and above) are given a value of 0.75, when converting the household into a consumption unit.
42. Stephens and Barrett, "Incomplete Credit"; World Bank, *World Development Report*.
43. See for example Bah et al., "Changing Rural–Urban Linkages."
44. World Bank, *World Development Report*.
45. Foeken and Uwuour, "Farming as a Livelihood"; World Bank, *World Development Report*.

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