# Paradoxes of Inclusion: Adverse Effects of Inclusive Interventions in Northern Ethiopia

Gebru, K.M.; Rammelt, C.; Leung, M.

**DOI**
10.1057/s41287-022-00518-0

**Publication date**
2022

**Document Version**
Final published version

**Published in**
European Journal of Development Research

The European Journal of Development Research (2022) 34:2324–2345
https://doi.org/10.1057/s41287-022-00518-0

SPECIAL ISSUE ARTICLE

# Paradoxes of Inclusion: Adverse Effects of Inclusive Interventions in Northern Ethiopia

**Kebede Manjur Gebru**[1] · **Crelis Rammelt**[2] · **Maggi Leung**[2]

Accepted: 30 January 2022 / Published online: 1 March 2022


## Abstract

The involvement of smallholders in various inclusive business models (IBMs) is being widely promoted in Ethiopia. The inclusion, exclusion and distribution effects of IBMs must be better understood, however, in order to make them more impactful. This study, which was carried out in three districts in northern Ethiopia, employed a mixed methods approach. Our results show that inclusion and exclusion are both complex and multidimensional. A focus on transaction costs, productive resource endowments and chain governance is crucial for enhancing smallholders' inclusion. Our results further indicate that income obtained from participation in IBMs is unequally distributed. The benefits of IBMs vary according to the underlying position of the smallholder. Hence, inclusive development interventions should acknowledge the various positions of smallholders and consider how their positions shape social relations locally. The paper thus reveals the various dimensions, contradictory tendencies, hidden costs and side effects of IBMs.

**Keywords** Ethiopia · Adverse inclusion · Exclusion · Inclusive development · Value chains

## Résumé

L'implication des petits exploitants agricoles dans divers modèles économiques inclusifs (en anglais: IBMs) est largement encouragée en Éthiopie. Les effets d'inclusion, d'exclusion et de distribution des modèles économiques inclusifs doivent

✉ Crelis Rammelt
C.F.Rammelt@uva.nl

Kebede Manjur Gebru
solomonmanjur@gmail.com

Maggi Leung
w.h.m.leung@uva.nl

[1] Department of Rural Development & Agricultural Extension, Mekelle University, PO Box 231, Mekelle, Ethiopia

[2] Department of Geography, Planning and International Development Studies, Amsterdam Institute for Social Science Research, University of Amsterdam, Amsterdam, The Netherlands

cependant être mieux compris pour avoir plus d'impact. Cette étude, menée dans trois districts au nord de l'Éthiopie, a utilisé des méthodes mixtes. Nos résultats montrent que l'inclusion et l'exclusion sont à la fois complexes et pluridimensionnelles. L'accent mis sur les coûts de transaction, les dotations en ressources productives et la gouvernance de la chaîne est essentiel pour améliorer l'inclusion des petits exploitants agricoles. En outre, nos résultats indiquent que les revenus obtenus de la participation dans des modèles économiques inclusifs est réparti de façon inégale. Les avantages des modèles économiques inclusifs varient selon la position sous-jacente du petit exploitant agricole. Par conséquent, les interventions pour un développement inclusif devraient reconnaître les différentes positions des petits exploitants et prendre en compte la façon dont leur position façonne les relations sociales au niveau local. Par ailleurs, l'article révèle les différentes dimensions, les tendances contradictoires, les coûts cachés et les effets secondaires des modèles économiques inclusifs.

## Introduction

Inclusive development (ID) emerged in response to the growth- and market-based development strategies of neoliberal politics and neoclassical understandings of development (Ros-Tonen et al. 2019). It has been argued that ID policies should go beyond growth and income-oriented agendas (Dekker & Pouw, this volume) to emphasize the social, relational and environmental dimensions of inclusiveness. Social inclusiveness aims at empowering the most marginalized through investing in human capital and enhancing the opportunities for participation (Ros-Tonen et al. 2019; Gupta and Vegelin 2016). Relational inclusiveness further looks at the underlying governance or mechanisms that perpetuate the concentration of power and inequality, and at how downward accountability can be improved (ibid.). Environmental inclusiveness promotes environmental sustainability and resilience, especially for those who rely directly on ecosystems and their services (ibid.). In recent years, the concept of ID has also gained importance on the international development agenda, most notably as a central element of the SDGs (Arts 2017). Following this global interest in promoting an ID agenda in the global South, linking smallholder farmers with several inclusive business models (IBM) has also received special attention.

The literature uses the term IBM interchangeably with 'inclusive value chains' (IVC) (Chamberlain and Anseeuw 2017; Kelly et al. 2015). In both cases, 'inclusive' refers to strengthening chain linkages with local smallholder farmers. References to IBM generally tend to replace IVC as the latter includes various types of business models that link different actors along the chain. IVC aims at product innovation and improving power balances between these actors through social upgrading and empowerment (Ros-Tonen et al. 2019). However, value chain integration provides limited input–output market support and hence exposes smallholders to market volatility. Thus, business-led approaches that involve input–output market support packages yields better income effects for participating smallholders. IBMs are commercially viable models that, in theory, are open to everyone and benefit everyone involved—as consumers, traders, employees or producers. However, in practice, IBMs are inevitably selective, as the production

of competitive commodities requires certain asset bases to finance quality inputs and to get access to markets, which is more difficult for the poor (van Westen et al. 2019).

Inclusiveness refers to changes that counter inequality, exclusion and exclusiveness (Dekker 2017). Inclusiveness works out differently in different IBMs. IBMs for agricultural commercialization can be either private or state-led (Kelly et al. 2015). Using IBM, multiple actors are integrated in value chains through a series of forward and backward business linkages that incorporate various types of business models. These modalities include the 'modern' agro-industrial models, which are dominated by a few global players with vertical value chains; the 'traditional' models, which are characterized by small-scale production with short supply chains; and the 'intermediate' models, which combine elements of the other two types (Kissoly et al. 2017). Modalities can differ in terms of the scale of production, the level of inclusiveness, the actors involved and the complexity of the embedded arrangements. The widely known typology of IMB are the informal, intermediary, multipartite, nucleus estate and centralized which vary in level of formality of the partnership and decentralization. The complexity of these business models varies by the commodity grown and its contractual agreement, number of actors involved, local context and market structure (Technoserve and IFAD 2011).

In Ethiopia, IBMs are being widely promoted as a way to connect farmers with extended market opportunities, which are presumed to generate numerous socioeconomic benefits, namely improved employment generation, income and food security, economic growth, gender equity and other development goals (Gebru et al. 2019). Other development outcomes reported in the literature include increased rural incomes (Chamberlain and Anseeuw 2017), increased farmers' access to input–output markets (Kelly et al. 2015), improved farmers' knowledge of business and improved food security (Gebru et al. 2019). IBMs therefore present a potential avenue for ID in agriculture. However, they can also be exploitative, e.g., due to asymmetries in bargaining power between firms and small-scale farmers (Vicol 2017).

IBMs were initially strategized to address the pre-existing institutional imperfections in smallholders' input–output markets and associated transactional costs. Due to the many trade-offs between market-based growth goals and other social, relational and environmental development objectives, the contribution of IBMs to addressing ID is controversial (Gebru et al. 2021; van Westen et al. 2019). To enhance the inclusiveness of IBMs, the private sector, public institutions and civil society often engage in multi-stakeholder partnerships. Despite these efforts, the type, extent and distribution of benefits from IBM interventions remains an empirical question.

Several studies have indicated that inclusion in agri-food IBMs is a function of productive resources. A large group of poor and vulnerable people have remained excluded from or adversely included in the increased opportunities offered by ID interventions (Dekker and Pouw 2021). Findings further indicate that the relational and social dimensions of ID are not typically achieved by current IBM configurations. Rather, benefits are skewed to only a portion of smallholders in communities and thus risk intensifying local inequality.

Although these studies capture the social stratification that often occurs during IBM implementation, a common assumption is that smallholder inclusion in value chains is categorically desirable (Hospes and Clancy 2011). However, Bolwig et al. (2010) point out that smallholders may actively opt out of participating in value chains, thereby challenging the assumption that exclusion from value chains results only from deficits in assets—a conclusion that may be logically drawn from studies that indicate that participating smallholders often have stronger asset portfolios. What is needed, therefore, are more robust analyses of the inclusionary and exclusionary dynamics of IBMs that would give a better understanding of participation processes in value chains, and of the benefits and/or adverse consequences that accrue as a result. We addressed these research needs by analysing three IBMs in the Ethiopian context: vegetables, sesame and malt barley. Using a mixed methods approach, we systematically examined: (1) the typology of smallholder positions in these IBMs, (2) the factors/reasons that affect the extent of smallholder farmers inclusion in/exclusion, and (3) the distribution of local outcomes of the interventions. Understanding these issues will shed light on the ongoing debate regarding the inclusiveness of IBMs and their implications for ID more generally.

## Conceptual Framework: Chain Governance and Transaction Costs

The notion of inclusive business emerged in the 1990s and is now a popular strategy in the sustainable socioeconomic empowerment of the poor worldwide (Likoko and Kini 2017). The IBM is generally seen as a win–win partnership between agribusiness firms, smallholder farmers and other stakeholders in which farmers are integrated into agricultural value chains as suppliers of agricultural products (Chamberlain and Anseew 2017). IBM schemes vary in terms of the scale of production, the actors involved and the complexity of the embedded arrangements.

In general, IBMs are classified as informal, intermediary, centralised, multipartite and nucleus-estate (Technoserve and IFAD 2011). The informal model involves small and medium sized enterprises who make simple contracts with farmers, usually on a seasonal basis. They are often repeated annually and their success depends on the proximity of the buyer to the seller. The intermediary model can involve subcontracting by companies to intermediaries with farmers. The multipartite model is a partnership between private firms (often farmers' cooperatives) and third parties who are assigned to facilitate access to services. Such arrangements are known for their limited investment, reduced costs due to partner cost-sharing and reduced risks due to geographically dispersed out-growers. Under the centralized model, a company provides support to smallholder production, purchases the crop, and then processes it, closely controlling its quality. In the nucleus-estate model, a large firm augments its own production through strict quantity specifications from small-scale farms. This model is common in dealing with perennial crops and other crops that display economies of scale.

In the literature, inclusion is generally considered desirable and exclusion undesirable (Tobin et al. 2016; Hospes and Clancy 2011). However, value chain interventions are diverse. The terms and conditions for inclusion in, and/or exclusion from, also vary

significantly according to the nature of the IBM. This in turn shapes the distribution of benefits and risks (Manda et al. 2020). Moreover, studies on value chains tend to conceptually dichotomize inclusion and exclusion (Gebru et al. 2019; Barrett et al. 2012). However, in real-life situations, there are grey areas as well as multiple dynamic relationships between inclusion and exclusion (Xu 2019). For example, inclusion/exclusion can be full or partial, and the processes and outcomes of inclusion/exclusion can be favourable (active) or adverse (passive). This paper presents an analysis of those dynamics based on the conceptual frameworks of chain governance and transaction costs (TCs).

Smallholders' position in IBMs can be of several types and is often governed by the underlying TCs needed to execute the several functions of each commodity value chain. For the actors and institutions involved, the transaction costs are of different types and vary from being visible to invisible or from being monetary to non-monetary in nature (Williamson 1979). For instance, a poor state of road networks and transport services may result in increased costs of input–output marketing and thus in high TCs (Gebru et al. 2019). Increased access to social networks and higher-levels of education decreases TCs, as the former enhance smallholder access to support services (such as loans, training, information, labour and energy) while the latter improves farmers' intellectual capacity to process information and make feasible decisions (Nandi et al. 2017).

Value chain governance is further shaped by institutions and laws. The governance structure refers to the relationship between the actors involved in a value chain, as well as the institutional tool by means of which the explicit coordination is implemented and the activities in the chain are performed (Gereffi et al. 2005). A shift from arms-length-based governance, in which buyers and sellers of agricultural produce agree on prices through open negotiations at local markets, to more explicit coordination can affect smallholder farmers' position in a value chain. For instance, vertically integrated markets, such as global value chains, may offer some farmers the opportunity to produce and sell differentiated high value-added products.

On the other hand, such arrangements may deter poor households from engaging in those value chains. Therefore, households with sufficient productive resources, large social capitals and strong bargaining powers may choose to participate in value chains as a livelihood strategy. However, other resourceful households could exclude themselves by being engaged in other, more lucrative livelihood alternatives (Manda et al. 2020). On the other hand, the high standards of vertically coordinated governance may impose challenges on and pose barriers to farmers who do not meet the production and marketing systems' standards. Exclusion in this case is imposed. In this regard, empirical evidence indicates that value chain participants generally have a higher economic status and that resource poorer households in the community are actively excluded (Tobin et al. 2016).

## Context of the Study

This study was conducted in three districts in northern Ethiopia that encompass a varying mix of traditional and transitional farming systems (Fig. 1). There are three major reasons why these three districts were chosen. First, they are

vulnerable to recurrent droughts, frosts, land degradation and market imperfections, which have severe implications for household food security. Second, various public–private partnerships are making ongoing efforts in these districts to promote the commercialization of smallholder farmers in an attempt to solve the food insecurity problem. Third, the three districts have three different agribusiness model arrangements that link smallholder farmers as producers. Three very different commodities were selected to better understand different crops with different IBM arrangements in different settings. The paper is based on case specific value chains with three different IBMs that represent those generally found in Ethiopia. Hence, these cases provide a full picture of the interplay between the commercialization of smallholder farmers and local food security in Ethiopia.

The first research site was Raya Azebo district, which is known for vegetable production and the use of informal types of business models. It is one of the five districts in the southern zone of Tigray National Regional State. The district is situated 1600–1800 m above sea level (a.s.l.) and has a mean annual temperature of 18 °C, a mean annual rainfall of 600 mm and a total population of 135,870. Mixed crop and livestock farming is the dominant farming system. Following the expansion of irrigation, the district is increasingly engaging in commercial vegetable production (Gebru et al. 2021).

The second research site was Kafta Humera district, which is known for sesame seed production and the use of intermediary types of business models. The district is located in the western zone of Tigray National Regional State (Fig. 1). Kafta Humera district is situated 560–1849 m a.s.l., has a mean annual temperature of 26 °C, a mean annual rainfall of 800 mm and a total population of

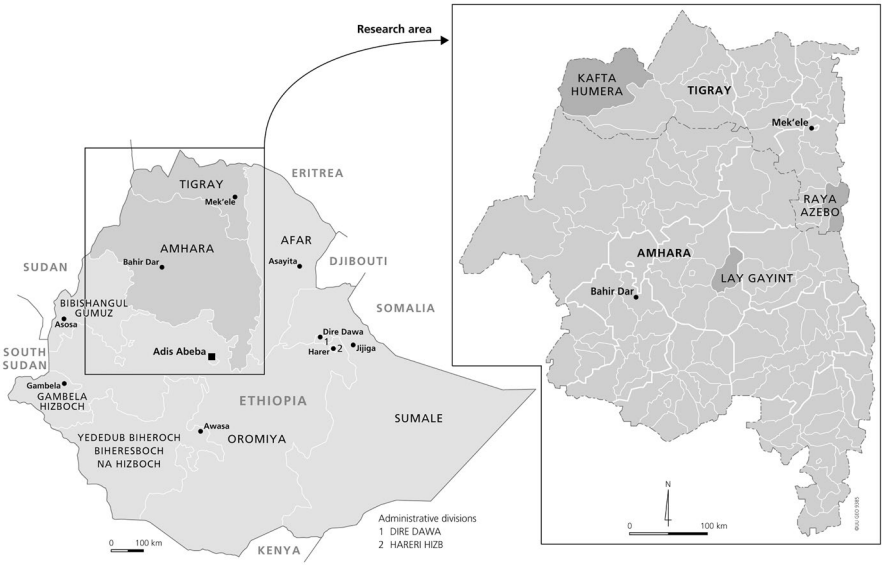


**Fig. 1** Map of the study area

115,580. It is one of Tigray's commercial farming areas and widely known for export-oriented sesame seed production.

The third research site was Lay Gayint district, which is located in the South Gondar zone of Amhara National Regional State. The district is situated 1500–3500 m a.s.l., has a mean annual temperature of 16 °C, a mean annual rainfall of 400–1100 mm and a total population of 206,499. Barley, wheat and potato are the dominant crops. Since 2010, the district has also been known for its increased commercial malt barley production (Gebru et al. 2021).

## Methodology

The present research was part of a broader study that assessed the impacts of various IBMs on household wellbeing in northern Ethiopia. The research design gave equal weight to both quantitative and qualitative research approaches. This mixed-methods approach has produced site-specific rich, solid and complementary evidence.

### Sampling Procedures and the Data

Multi-stage sampling procedures were employed in order to obtain representative information. First, a list of villages and their status in terms of inclusion was generated. All villages involved in malt barley, vegetable and sesame production were then stratified based on market distance. Three villages from each commodity site were then randomly selected from the list of the districts' villages to represent each of the stratified territories in the district. Survey data were collected through home visits to 754 farm households by four trained interviewers under the close supervision of the principal researcher. Focus group discussion (FGD) participants were identified in consultation with key informants in the villages and in accordance with certain selection criteria to ensure a representative sample in terms of engagement in the IBMs: low to high wealth status, gender and age. The data for this study were collected from 38 FGDs with a total of 182 participants, and from nine key informant interviews with a total of 27 participants (Table 1). All FGDs were facilitated by the principal researcher and were transcribed the same evening or on the following day by the FGD facilitator.

### Quantitative Estimation Procedures

#### Extent of Inclusion Measure

For the present research, a model was constructed that explains the level of inclusion using various explanatory variables. The literature offers several methods for analysing inclusion and the level of inclusion in development interventions. The level of inclusion has often been measured by the ratio of area allocated to the specific cash crop in the IBM scheme to that of the total land operated by each household. Empirical results show that the process of inclusion comprises two key steps: the decision

**Table 1** Summary of data sources

| District | Number of FGDs and participants | | Key informant interviews | Household survey respondents |
|---|---|---|---|---|
| | FGDs (experts) | FGDs (farmers) | | |
| Raya Azebo | 1 (6) | 12 (49) | 3 (9) | 270 |
| Kafta Humera | 3 (12) | 12 (73) | 3 (9) | 241 |
| Lay Gayint | 2 (6) | 8 (36) | 3 (9) | 243 |
| Subtotal | 6 (24) | 32 (158) | 9 (27) | 754 |
| Grand total | 38 (182) | | | 754 |

to engage and the decision on how much to engage are assumed to occur jointly or separately. If one assumes the concurrent occurrence of these two decisions it could be plausible to use either Logit or Probit models for discrete choice conditions. For continuous dependent variables, Tobit or ordinary least square (OLS) models are widely used (Greene 2011). These models assume that the two decisions (participation and level of participation) are made jointly and hence the same set of variables and coefficients are used to determine both the probability and the level of participation (Greene 2011). The choice of either OLS or Tobit model is mostly based on the nature of the samples, the expected relationships between the two decisions, and the fundamental statistical assumptions of the models one would consider.

In conditions where the dependent variable to be modelled is limited in its range, using OLS estimation would result in biased and inconsistent parameter estimates. In this case, use of Tobit model is recommended and widely used to identify factors related with the level of participation or adoption (Gebremedhin and Swinton 2003). In the present research, a Tobit model that explains the extent of inclusion was constructed using various explanatory variables. The Tobit model can be defined as:

$$\begin{aligned} Y_i^* &= \beta X_i + U_i,\ i = 1, 2, \ldots n \\ Y_i &= Y_i^* \qquad \text{if } Y * > 0 \\ &= 0 \qquad \text{if } Y_i * \leq 0 \end{aligned} \tag{1}$$

where $Y_i$ is the observed dependent variable, in this case the level of inclusion. The dependent variable was calculated as the ratio of the land allocated to malt barley, sesame and vegetable to that of the total land operated by each household during the survey year.

$Y_i^*$ = the latent variable which is not observable, $_{Xi}$ = vector of factors affecting level of inclusion, $Bi$ = vector of unknown parameters, $U_i$ = residuals that are independently and normally distributed with mean zero and a common variance $\sigma^2$.

### Inequality Measures

The next research objective was to assess how the values of outputs (i.e., incomes) from IBMs was distributed among the households. To assess the distribution of income among the households within each site, we calculated Gini coefficients and plotted Lorenz curves. Gini coefficients assess the inequality of income distribution

between households. The Gini coefficient ranges from zero to 1, with zero indicating perfect equity, and 1 perfect inequity, with one entity owning all and the rest nothing (Gini 1936). In the present research, the income obtained from the production of sesame, vegetables and malt barley in each household was used to calculate the Gini coefficients.

### Qualitative Data Analysis

Data generated from the FGDs were analysed using thematic analysis, which is an inductive approach grounded in the participants' views. It is a flexible and useful research tool that can potentially provide a rich and detailed, yet complex account of data. It is a method for identifying, analysing and interpreting various aspects of the research themes within the data. Thematic analysis identifies certain topics or patterns across an entire dataset, rather than within a data item. More importantly, it is adaptable to various theories and methods. A six-phase iterative process as proposed by qualitative scholars (Braun and Clarke 2006) was followed to analyse the data generated from FGDs: (1) Familiarizing with the transcript, (2) Generating initial codes, (3) Searching for themes, (4) Reviewing themes, (5) Defining and naming themes, and (6) Report synthesis.

## Results and Discussion

### Smallholders' Position Based on Binary and Extent Concepts

Smallholders' positions in the IBMs differ according to how inclusion itself is conceptualized (i.e., binary and the extent of inclusion) and the specific commodity under investigation (Table 2). For instance, using the binary concept of inclusion, 54% of the sampled farmers in the malt barley business fell into the included category, while 46% of them were grouped in the excluded category. However, based on the extent of inclusion concept, 40.5% of the sample households were partially included while only 5.5% were fully included.

In the case of the vegetable IBM, the binary notion of inclusion puts 42.96% and 57.04% of the sample farmers in the included and the excluded category, respectively. According to the extent of inclusion concept, 40.42% were partially included and 7.78% were fully included. Similarly, a binary view on the sample farmers in the sesame business case study puts 50.64% in the included category and 49.35% in the excluded category. The extent of inclusion concept regards 29% as partially included and 21% as fully included.

**Table 2** Smallholders' position based on binary and extent concepts

| Binary/Extent | Inclusion profile | Business model | | |
|---|---|---|---|---|
| | | Malt barley frequency (%) | Vegetable frequency (%) | Sesame frequency (%) |
| Binary concept of inclusion | Exclude | 127 (54) | 154 (57.04) | 114 (49.35) |
| | Include | 108 (46) | 116 (42.96) | 117 (50.64) |
| Extent of inclusion | Partially included | 95 (40.50) | 95 (40.42) | 67 (29.00) |
| | Fully included | 13 (5.50) | 21 (7.78) | 50 (21.65) |

## Factors Affecting Smallholder Farmers' Extent of Inclusion in/Exclusion from Value Chains

The result of the Tobit model showed that age was positively related with the level of inclusion in the sesame business (Table 3). The coefficients of this variable were significant at less than 1% probability levels, implying that as farmers gain more experience over time, their level of inclusion in the sesame business increases. The

**Table 3** Factors affecting the extent of inclusion in/exclusion from business models

| | Business models | | |
|---|---|---|---|
| | Sesame | Malt barley | Vegetables |
| | Marginal effects | | |
| *Demographic* | | | |
| Sex of the household head | −12.57 | 4.23 | 4.42 |
| Age of the household head | 1.30*** | −0.68** | 0.04 |
| Literacy status of the household head | 19.92** | 0.38 | 11.28 |
| Dependency ratio | 40.17 | −4.58 | −8.08** |
| *Asset ownership* | | | |
| Land size (hectare) | 3.34** | 30.20*** | − 19.02** |
| Livestock size (TLU) | 1.20** | 4.40*** | 5.26*** |
| Access to irrigation | – | – | 42.15*** |
| *Institutional* | | | |
| Use of loan | 36.04*** | −4.64 | 23.01*** |
| Extension participation index | −46.26** | 0.43** | 0.37*** |
| Social network index | −6.94 | 0.58** | 0.56** |
| Distance to district market | −1.34 | −0.12** | −4.23** |
| Distance to nearest market | −91.01*** | −0.02 | −0.03 |
| Log likelihood | −677.05 | −637.71 | −666.62 |
| *Model summary* | | | |
| LR $chi^2$ | 167.41 | 54.95 | 68.31 |
| Prob > $chi^2$ | 0.00 | 0.00 | 0.00 |
| Pseudo $R^2$ | 0.110 | 0.04 | 0.05 |

** and *** represent the statistical significances at the 5% and 1% levels, respectively

households' previous experiences, as indicated by the age of the household head, are likely to have a range of either positive or negative influences on the level of inclusion and this will likely influence their attitudes towards the level of inclusion in the sesame business. These households often also have better socioeconomic conditions, which enable them to cope with TCs.

A larger non-economically active family size of the household, as indicated by the dependency ratio, is negatively related and statistically significant at less than 1% probability to the level of inclusion in the vegetable business. For the sesame business, the level of inclusion increases with an increase in family size, as it may increase the number of household members who actively provide farm labour. On the other hand, the level of inclusion declined with the number of dependents in the household, capturing the intuitive expectation that the time spent caring for dependents shifts labour away from labour-intensive activities.

The literacy status of the household was found to be positively related to the level of inclusion in the sesame business. Therefore, better education is likely to reduce information costs for smallholder farmers and it is likely that such farmer may face lower TCs (Nandi et al. 2017). Travel time from farm to nearest market affects the level of inclusion in the sesame business negatively ($p < 5\%$). Better market connections reduce the TCs caused by information asymmetry and increase the availability and use of support services that can enhance the level of inclusion (Rammelt et al. 2017). Increased distance from dwelling to district market negatively influences the level of inclusion in the malt barley and the vegetable business ($p < 0.05$). In both vegetable and malt barley study area, the district centre is the key input–output market. Mobility-related TCs inhibit participation in the IBMs as they decrease efficient market participation.

Farmer's ownership of assets such as livestock is important not only as productive resources, but also as sources of cash and collateral to access finance. Our results indeed show that an increase in livestock size has a significant and positive impact on the level of inclusion in all three business models ($p < 5\%$). Thus, assets empowerment and protection against shocks are critical conditions to enhance smallholders' level of inclusion in IBMs. Our FGD data also show that farmers perceive livestock as a proxy for economic wellbeing and for facilitating farmers' level of inclusion in IBMs. Included farmers have larger herd sizes than non-included farmers. FGD results again indicate that livestock are essential productive resources for the vegetable business as sources of draught power as well as sources of income.

In addition, an increase in land size has a significant and positive effect on the level of inclusion in the malt barley and the sesame business. Moreover, farm size is often used as an indicator of wealth in agrarian settings, and the results here suggest that wealthier households are more likely to allocate more land for IBM activities. They may be more able and willing to bear risks than their counterparts, and they may have preferential access to inputs and credit (Musara et al. 2011). However, land size was found to negatively affect the level of inclusion in the vegetable business. Our results show that ownership of irrigation technology is a more important explanation of inclusion. The coefficient of this variable is positive and statistically significant at less than 1% probability level. As rainfall is unreliable in the study area, recurrent droughts are common and make the cultivation of input-intensive

vegetables a risky business. Access to a reliable water supply is therefore also essential for vegetable IBMs. As mentioned by an FGD participant: *"If you have a piece of plot by chance where the government installed irrigation, it will be easy to engage in vegetable farming."*

Most farmers who have irrigated lands often partially lease out their farm plots to other farmers who lack those facilities as an additional source of income. An FGD participant said that: *"If your farm is in a water abundant area, you will at least [partially] cultivate these crops [vegetables] in pieces [0.25 ha] by partly renting out your land."*

Our results also show that access to social networks influences the level of inclusion in the malt barley and the vegetable business positively and significantly. Social networks promote IBMs through their services and knowledge exchange between different actors along the value chains. Social networks are sources of information that serves to reduce TCs (Gebru et al. 2019). An increased extension participation index also positively and significantly influences the level of inclusion in the malt barley business. However, an increased extension participation index was found to negatively and significantly affect the level of inclusion for the sesame and the vegetable business. This suggests a passive response of extension systems in the area towards increased market orientation. The FGDs supported the finding that household membership of cooperatives, administrations and informal saving credit groups improve farmers' access to services such as training, credit and inputs. Non-included farmers are generally not involved in such institutions for various social, historical and economic reasons. As mentioned by a farmer who was fully excluded: "*I work as wage labourer, but if you join such cooperatives, you need to go to frequent meetings, which restricts mobility for subsistence. Moreover, to be part of such institutions you need to pay some fees*."

Access to loans again positively and significantly increased participation in the sesame and the vegetable business by 36.04 and 23.01 ($p < 1\%$), respectively. The production of sesame and vegetables is a labour-intensive activity that requires many financial resources to, for example, employ labour.

It is clear from the finding that households with better access to productive resources and access to institutional supports were selected for inclusion while the poorest households were excluded. IBMs are selective in favour of resource-rich farmers in which smallholders are less able to meet participation criteria. Thus, the approach tends to increase inequality in the community. The implication is clear: if IBM is chosen for ID, then the poorest are less likely to benefit from the strategy within their present status—especially in terms of access to productive resources (van Westen et al. 2019). Therefore, if IBM is the designated path for ID there is much scope for agribusiness firms, policy makers and farmers' agencies to improve the mechanisms that can promote the inclusion of disadvantaged groups. Those households are more likely to participate after their conditions become less vulnerable. On the other hand, inclusion of the poorest households (through better targeting) might not be the most appropriate ID strategy for them. Instead, it might be more effective to assist this group in securing their asset base and empower them to decide whether or not they wish to engage in IBMs.

### Smallholder's Position in Value Chains Based on the Outcomes and Process of Inclusion

Looking at the sample population's characteristics and the resultant welfare outcomes of the different IBMs, households can be classified as (1) favourably included, (2) favourably excluded, (3) adversely included or (4) adversely excluded (see Fig. 2). As noted, these dimensions should not be seen as strict delimitations; for example, some farmers may be partially included. As mentioned, households with better productive resource endowments and strong social networks were favourably included in all three IBMs. For these smallholders, inclusion had a positive effect on welfare outcomes such as income and food security (Table 4). In terms of characteristics, these households are risk-takers and progressive. An FGD participant at the malt barley site confirmed this: "*Malt barley production initially used a progressive farmers' approach as targeting criteria, hence the targeting process resulted in enhancing the income of those who were already better off.''.*

Similarly, FGD results for the vegetable IBM show that productive resources—particularly access to irrigation facilities—are essential conditions for self-inclusion. Better experiences with new agricultural technology adoption also lead to favourable inclusion.

For resource-poor households, on the other hand, access to an irrigation facility alone was insufficient and resulted in adverse inclusion. For example, a female-headed household reported: *"I have plots with access to irrigation, where we are forced by the government to cultivate cash crops, though we do not have the cash to buy draught power or inputs to get enough from the crop."* Other farmers farther away from the sesame and vegetable sites explained the lack of control over the output market as another cause for negative welfare effects on their annual incomes. They further believe they are not the right persons for such business and perceive that they are adversely included. This was described by a participant in the vegetable

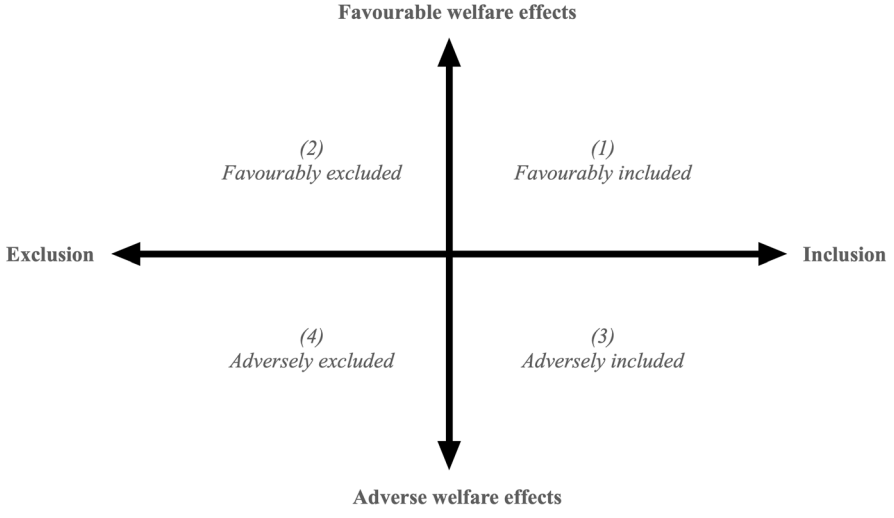


**Fig. 2** Smallholder's position in value chains based on the process and outcomes

**Table 4** Qualitative explanation for the inclusion/exclusion continuum

| Smallholders' status in the BM | | Major characteristics | Agent for inclusion/exclusion | Welfare effects of inclusion/exclusion |
|---|---|---|---|---|
| Included | Favourably | Resourceful, networked, risk taker, positive attitude towards the business engaged in | Primarily self- imposed; also imposed by external actors | Earns substantial benefits by being included in a value chain |
| | Adversely | Networked, resource poor, have limited detail on the benefits of the business engaged in, engage in fewer livelihood activities | Externally imposed | Less successful in welfare outcomes even if they are included in a value chain |
| Excluded | Favourably | Resourceful, networked, risk averter, have a multitude of livelihood trajectories to be prioritized | Self-imposed | Earns comparable benefits from other livelihood trajectories other than a value chain business |
| | Adversely | Determined to engage in value chains but left behind either by lead company selection criteria or possess geographically marginal land | Externally imposed | Left behind from the emerging welfare outcomes<br>Less successful in welfare because of the externally imposed exclusion from the value chain business |

business as follows: *"Vegetable overproduction often makes the price decrease and thereby affects the envisaged benefits. Hence production without ensured output prices is less helpful for us."*

Exclusion was explained by the farmers themselves as an active decision (self-imposed) or as a result of external actor involvement (externally-imposed). In the case of self-imposed exclusion, farmers own the basic resources required for inclusion, but are unwilling to participate in IBMs after assessing the risk of loss, additional investment requirements, the unpredictability of future prices and a general lack of confidence in the benefits of a particular commodity. These smallholders make an opportunity cost analysis and opt for alternative income sources and more advantageous trajectories, which we therefore label as favourable exclusion.

For other FGD participants, exclusion was partially self-imposed and partially externally imposed. For example, in the sesame area farmers indicated the limited availability of loans as the major reason for not engaging in the sesame business, despite their desire to do so. As noted by a female respondent: *"I have enough land but due to financial constraints I did not grow sesame."* Farmers also said that the shift in farming practices from traditional hand- or ox-based ploughing to rented tractor-based ploughing poses a barrier to participation: *"In the past, we used to sow sesame using hand tools, where the husband digs the pit and his wife and children plant the seed following him. Now if you want to have a good harvest, frequent ploughing is necessary, hence I opted to be out."* Others FGD participants in the malt barley and the sesame business said that they had bad experiences with these IBMs and decided to pursue other activities governed by opportunity costs.

In the three IBMs, some excluded households were capable of participating but chose not to do so. Given that self-selection appeared to take place along the lines of economic status, a reasonable conclusion is that these non-participating households had the resources to participate in the value chains, or may be considered market-viable, but self-excluded. As indicated by previous empirical evidence, this kind of exclusion should be viewed as an expression of their own priorities and values rather than structural pressures exerted on a marginalized population by other value chain actors or facilitators (Xu 2019; Manda et al. 2020).

Adverse exclusion is problematic as it is often externally imposed. Explanations for adverse exclusion from the three IBMs varied, but the process of selection was one determining factor in the malt barley business, as was plot targeting during the installation of irrigation facility by the government in the case of the vegetable business. Some of the FGD participants in the malt barley business area said that they were interested in and were able to engage in the value chain but were excluded by the IBMs selection/targeting process. In this regard, an FGD participant said: *"Malt barley production was initially popularized by the company in collaboration with frontline agricultural offices and administrative bodies. They used a model farmer's approach to target producers of malt barley. At that stage, farmers were trained and given free starter seeds. This selection process, which laid the foundations for the current situation, was biased towards those with social and familial links with the administrative bodies."* Describing this problematic situation, another FGD participant said: "*Things were unclear; decisions were less transparent. To be in 'their net', one has to be either part of the administrative position or have someone over*

*there."* Their exclusion resulted not from an active self-imposed decision but from them being less networked with administrative institutions, which in turn results in bias and inequality. Thus, opportunities for smallholding farmers in high-value markets may allow some degree of inclusion, but they may also widen existing inequalities and power asymmetries in local places (Manda et al. 2020).

For many farmers, resource limitations led to their adverse exclusion even if they could have been included with minimum support from outside. Households adversely excluded from the vegetable business were those who did not own land in areas with relatively better groundwater potential and government-installed irrigation facilities. As indicated by one of the FGD participants in the vegetable business area, rainfall is unreliable, which makes the cultivation of input-intensive crops a risky activity. One of the FGD participants said *"If you happen to have a plot of land where the government installed irrigation, you are at least half way to being involved in vegetable farming."* Irrigation infrastructures thus became a means for favourable inclusion for some and adverse exclusion for others. To prevent the latter, irrigation infrastructure site selection should have been more sensitive to the economic status of the beneficiaries by focussing on poor households and marginal areas. Areas where irrigation and other public infrastructures were installed have become centres for market-oriented vegetable development and smallholders' inclusion.

Finally, although IBMs created economic opportunities for the better-off and favourably included households, these changes have also had a wide range of other effects on the poorer and adversely excluded households. The FGDs revealed that these effects include increasing inequality and a reduction in resource sharing and exchange relationships on which the adversely excluded households used to rely. These problems make commercial farming on its own less likely to generate substantial improvements to the welfare of the poor. Instead, they promote social differentiation by increasing the vulnerability of the adversely excluded households through altering the traditional social fabrics of gifts and in-kind exchanges of labour, oxen power, seed, food and other productive common resources. On the other hand, the middle-class and younger generations tend to appreciate these market-based labour arrangements and consider the previous in-kind exchange as unequal and exploitative. Better-off included households were also positive about the monetary-based employee–employer relationship as it frees them from local charity obligations.

The results provide a more nuanced understanding of the multiple positions of smallholders in IBMs. Inclusiveness is a dynamic process shaped by multiple factors operating from individual actor's lifeworld to global scales (Ros-Tonen et al. 2019). This finding further demonstrates that participation in IBMs may involve exclusion and adverse inclusion. Therefore, contrary to what the name implies, IBMs are not inclusive for all farmers. This finding also challenges the normative belief that inclusion is good and exclusion is bad. Hence, we argue for in-depth understanding of the reactions and decision-making processes of the smallholder farmers that are anticipated to benefit from IBM interventions. This is particularly important in the case of business-led approaches, as interventions often place little emphasis on the local realities by assuming that such interventions are always socially and economically feasible and widely beneficial (Gebru et al. 2021). Hence, we suggest that economic developments through

business-led approaches must pay attention to socioeconomic differences within the target population.

### Distributions of local outcomes of inclusive interventions

The Gini coefficient is the commonly used measure for inequality. A Gini coefficient of zero indicates perfect equality, while 1 signifies complete inequality (Gini 1936). In relation to the Lorenz curve, the Gini coefficient measures the area between the Lorenz curve and the diagonal. In the context of this research, the inequality of income distribution between households that engaged in the IBMs in each research area was calculated using Gini coefficients and plotted Lorenz curves, as listed in Table 5.

Of the three IBMs, the Gini coefficients of vegetables and sesame are larger than 0.5, indicating the presence of high inequalities even within the included households. Compared to that of vegetable and sesame, the inequality in the malt barley business was slightly lower. The share of the value of outputs from the three IBMs for (included) households in the lowest income quintile was equal to zero, while (included) households in the richest quintile obtained about 34% of their total income from the vegetable business, about 52% from the malt barley business and about 58% from the sesame business, respectively.

As depicted in Fig. 3, the distribution of the income share from the vegetable business across the quintiles ranges from 1 to 66%: the first quintile received only 1% of the income share, while the second quintile obtained 6%. Similarly, the third, fourth and fifth quintiles received 16%, 34% and 66%, respectively. Figure 4 shows that the distribution of income shares from the sesame business across the quintiles ranges from 2 to 59%: the first quintile received only 2% of the income share, while the second quintile obtained 9%. Similarly, the third, fourth and fifth quintiles received 21%, 41% and 59%, respectively. Figure 5 shows that the distribution of income share from the malt barley business across the quintiles ranges from 3 to 52%: the first quintile received only 3% of the income share, while the second quintile received 12%. Similarly, the third, fourth and fifth quintiles received 27%, 48% and 52%, respectively.

The results of the Gini coefficients from the Lorenz curves for the three IBMs shows that households in the highest quintile received the highest income share as compared to the preceding quintiles. There is increasing inequality among the included households caused by a corresponding increase in the distribution

**Table 5** Gini Coefficient of output value distribution among households for three inclusive business models

| IBM | Gini coefficient | Share of output value in percent | |
|---|---|---|---|
| | | Lowest income quintile | Highest income quintile |
| Vegetables | 0.58 | 0 | 34 |
| Malt barley | 0.44 | 0 | 52 |
| Sesame | 0.51 | 0 | 58 |

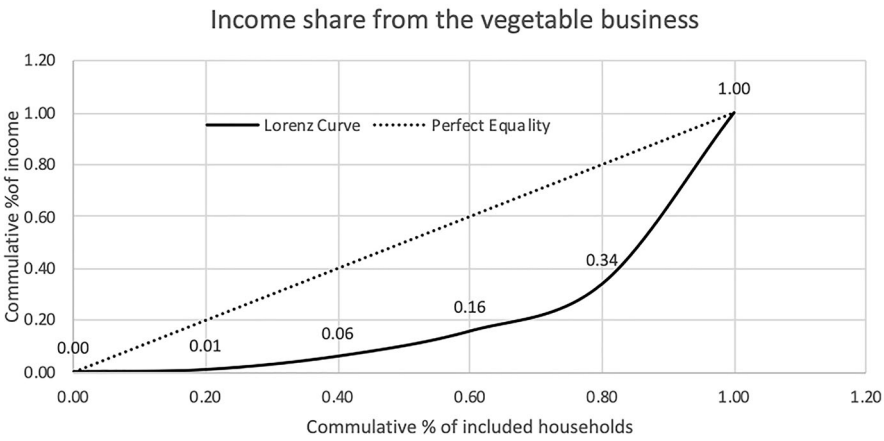


**Fig. 3** Income share from the vegetable business

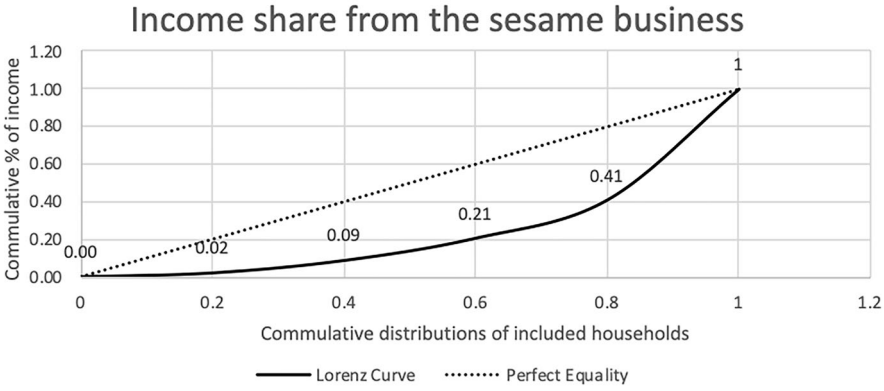


**Fig. 4** Income share from the sesame business

of income share from each IBM. The possible reasons for the underlining inequality within included households across the quintiles could be associated with an underlining disparity in resource endowment, the extent of participation, the nature of the IBMs and the bargaining power of the households.

## Conclusions and Policy Implications

This paper presents evidence on diverse hierarchies of smallholders' positions in value chains and the reasons for those differential positions, and on the distribution of local outcomes of IBMs in northern Ethiopia. It shows that inclusion and exclusion should not be seen as a dichotomy, as farmers can have different positions in an IBM. Our results show that inclusion and exclusion are both complex and

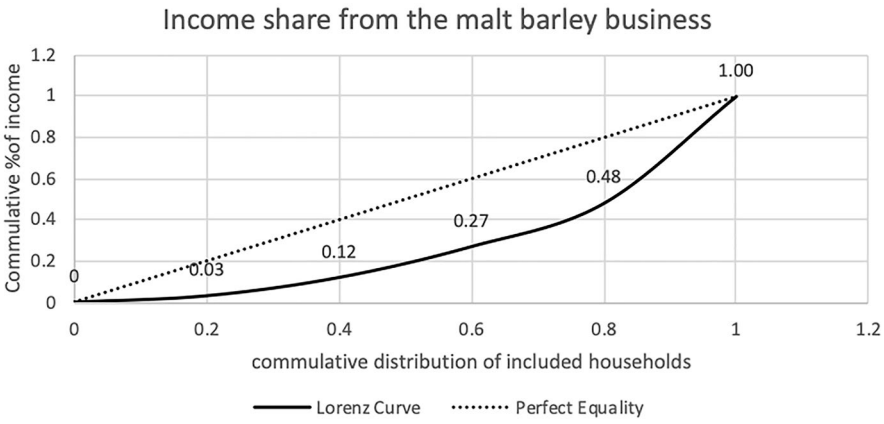


**Fig. 5** Income share from the malt barley business

multidimensional and depend on how positions (inclusions and exclusion) are conceptualized. A close look at the differences between types of farmers' positions in an IBM challenges the established expectation that inclusion is always essential and that exclusion is an undesirable category as a whole (Hospes and Clancy 2011). The present research found that some farmers could be self-included and enjoy benefits from the IBMs, while others excluded themselves after assessing the transaction and opportunity costs of engagements—either from their own experiences or from social learning. Exclusion can also be externally- or self-imposed. Self-imposed exclusion is not always adverse; as such people challenge the governance of the IBM, while externally-imposed exclusion tends to lead to adverse effects on the poor.

This study suggests the need for a more detailed investigation into processes and determinants of levels of inclusion and exclusion in agricultural IBMs. A focus on transaction costs as well as chain governance in targeting processes are crucial for enabling levels of inclusion that may result in ID. The effects of transaction costs on the level of inclusion vary according to the nature of each IBM, suggesting the need for case specify studies when examining such costs. The findings further show that access to market and social networks are the key transaction costs that affect smallholder farmer's level of inclusion in the IBMs. The dynamics of inclusion and exclusion were also found to be affected by external factors: the decision by frontline chain facilitators—such as the government and company representatives—to actively exclude or include farmers is part of the value chain governing process. As indicated, in the malt barley business, where farmers are excluded based on their socioeconomic status and poor links with frontline actors, chain governance is implemented by enforcing criteria for inclusion/exclusion. On the other hand, households that actively opt out of value chains may be questioning the governance structures of the value chains due either to the quality requirements imposed by the buyers or to unfair targeting process.

In relation to IBM typology, formal models such as intermediaries, multipartite and nucleus states are likely to be more sustainable. In these models, inbuilt

business support is available from agribusiness companies for product upgrading and sustainable benefit flows along the value chain actors. However, informal models (as in the vegetable case) are risky as they lack guaranteed input–output markets and value creation for quality improvement. Based on the results of this study, it is possible to argue that a high degree of institutional pluralism of both profit-oriented chain actors and non-profit supporters (as in the sesame and malt barley cases) is a critical factor for ID. Indeed, while profit-oriented actors take the product one step further for upgrading purposes, non-profit oriented supporters take the initiative to bring people on board and monitor the situation (Kelly et al. 2015).

The results concerning the distribution of local outcomes of inclusive interventions show that the distribution of income from IBMs among the included households was quite unequal: the better-off included households were found to receive higher returns, implying that inclusion in commercial value chains does not promote equity. Moreover, farmers' level of engagement and revenues generated from IBMs are directly related to resources endowments. In the end, the promotion of such development interventions might perpetuate existing inequalities in society.

Contrary to the neoliberal narratives of market-led solutions for development (World Bank 2011), our findings show that the benefits of such interventions are not straightforward, and hence inclusion is neither inherently desirable nor inevitable. Rather, ID interventions should acknowledge the various positions of smallholders as stipulated in this paper and consider how smallholders' positions shape social relations locally.

The findings presented in this paper have far-reaching implications for the emerging business approach to ID. ID interventions are not neutral in their effects outside of the groups that are included. Indeed, development that is inclusive of some may cause harm to those who are excluded. In developing countries, IBMs are limited in numbers and a development strategy based on this approach risks to marginalize the poor through unrealistic expectations. Paradoxically, existing IBMs imply selection and hence exclusion (van Westen et al. 2019). Thus, the approach tends to increase rather than decrease inequality in the communities. This implies that IBMs are only a partial solution, and an insufficient answer for addressing ID.

The engagement of smallholders in IBMs will never become a solution for all, and it will come with positive and negative impacts simultaneously. We must therefore rethink how such interventions are being evaluated. Even seemingly successful cases bring new challenges. These various dimensions, contradictory tendencies, hidden costs and side effects of IBMs are relevant for current ID policy. They point to the importance of and recommendations for alternative or supplementary development pathways that might work better for those who are adversely included, excluded or adversely excluded. In the context of market-driven approaches to food security, complementary mechanisms such as improved community-based asset-building programmes should be put into place to empower those living in the most vulnerable conditions. These mechanisms could endow marginalized groups with the necessary productive capital to take part in new commercial value chain

opportunities—if they chose to. Alternatively, support could go towards empowering informal local networks on which poorer households rely to organize the non-market exchange of services, such as labour sharing or access to credit.

**Acknowledgements** This study is part of the research agenda of the Knowledge Platform on Inclusive Development Policies and funded by the Ministry of Foreign Affairs through NWO-WOTRO.

## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there are no conflicts of interest.



## References

Arts, K. 2017. Inclusive sustainable development : A human rights perspective. *Current Opinion in Environmental Sustainability* 24: 58–62.

Barrett, C.B., M.E. Bachke, M.F. Bellemare, H.C. Michelson, S. Narayanan, and T.F. Walker. 2012. Smallholder participation in contract farming: Comparative evidence from five countries. *World Development* 40: 715–730.

Bolwig, S., S. Ponte, A. Du Toit, L. Risgaard, and N. Halberg. 2010. Integrating poverty and environmental concerns into a value chains analysis: A conceptual framework. *Development and Policy Review* 28: 173–194.

Braun, V., and V. Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3 (2): 77–101.

Chamberlain, W., and W. Anseeuw. 2017. *Inclusive businesses in agriculture what, how and for whom? Critical insights based on South African cases*. Cleveland: Sun Press.

Dekker, M. 2017. Inclusive Development in Africa. Inaugural Address, Leiden University: African Studies Centre.

Dekker, M. and Pouw, N. 2021. *Introduction to the special issue: Policies for Inclusive Development in Africa*.

Gebremedhin, B., and S. Swinton. 2003. Investment in soil conservation in northern Ethiopia: The role of land tenure security and public programs. *Agricultural Economics* 29: 69–84.

Gebru, K.M., M. Leung, C. Rammelt, A. Zoomers, and G. van Westen. 2019. Vegetable business and smallholders' food security: Empirical findings from Northern Ethiopia. *Sustainability* 11 (3): 743.

Gebru, K.M., C. Rammelt, M. Leung, A. Zoomers, and G. van Westen. 2021. The commodification of social relationships in agriculture: Evidence from northern Ethiopia. *Geoforum* 126: 350–360.

Gereffi, G., J. Humphrey, and T. Sturgeon. 2005. The governance of global value chains. *Review of International Political Economy* 12 (1): 78–104.

Gini, C. 1936. On the measure of concentration with special reference to income and statistics. *Colorado College Publication, General Series No.* 208: 73–79.

Greene, W. 2011. *Econometric analysis*. New York: New York University.

Gupta, J., and C. Vegeli. 2016. Sustainable development goals and inclusive development. *International Environmental Agreements* 16: 433–448.

Hospes, O., and J. Clancy. 2011. Unpacking the discourse on social inclusion in value chains. In *Value chains, social inclusion and economic development: Contrasting theories and realities*, ed. A.H.J. Helmsing and S. Vellema, 23–41. Abingdon, Oxon: Routledge.

Kelly, S., S. Vergara, and H. Bamman. 2015. *Inclusive business models. Guidelines for improving linkages between producer groups and buyers of agricultural produce*. Rome: Food and Agriculture Organization of the United Nations.

Kissoly, L., A. Faße, and U. Grote. 2017. The integration of smallholders in agricultural value chain activities and food security: Evidence from rural Tanzania. *Food Security* 9 (6): 1219–1235.

Likoko, E., and J. Kini. 2017. Inclusive business: A business approach to development. *Current Opinion in Environmental Sustainability* 24: 84–88.

Manda, S., A. Tallontire, and A.J. Dougill. 2020. Out grower schemes and sugar value-chains in Zambia: Rethinking determinants of rural inclusion and exclusion. *World Development* 129: 104877.

Musara, J.P., E. Zivenge, G. Chagwiza, J. Chimvuramahwe, and P. Dube. 2011. Determinants of smallholder cotton contract farming participation in a recovering economy: Empirical results from Patchway district, Zimbabwe. *Journal of Sustainable Development in Africa* 13 (4): 1–12.

Nandi, R., N.V. Gowdru, and W. Bokelmann. 2017. Factors influencing smallholder farmers in supplying organic fruits and vegetables to supermarket supply chains in Karnataka, India: A transaction cost approach. *International Journal of Rural Management* 13 (1): 85–107.

Rammelt, C.F., M. Leung, and K.M. Gebru. 2017. The exclusive nature of inclusive productive employment in the rural areas of northern Ethiopia. *Work, Employment and Society* 32 (6): 1044–1060.

Ros-Tonen, M.A.F., V. Bitzer, A. de Laven, D.O. Leth, Y. Van Leynseele, and A. Vos. 2019. Conceptualizing inclusiveness of smallholder value chain integration. *Current Opinion in Environmental Sustainability* 41: 10–17.

Technoserve and IFAD. 2011. *Out grower scheme–Enhancing profitability*. Technical Brief.

Tobin, D., L. Glenna, and A. Devaux. 2016. Pro-poor? Inclusion and exclusion in native potato value-chains in the central highlands of Peru. *Rural Studies* 46: 71–80.

Van Westen, G., E. Mangnus, J. Wangu, and S.G. Worku. 2019. Inclusive agribusiness models in the Global South: The impact on local food security. *Current Opinion in Environmental Sustainability* 41: 64–68.

Vicol, M. 2017. Is contract farming an inclusive alternative to land grabbing? The case of potato contract farming in Maharashtra, India. *Geoforum* 85: 157–166.

Williamson, O.E. 1979. Transaction-cost economics: The governance of contractual relations. *The Journal of Law and Economics* 22 (2): 233–261.

World Bank. 2011. *Rising global interest in farmland: Can it yield sustainable and equitable benefits?* Washington DC: World Bank.

Xu, Y. 2019. Politics of inclusion and exclusion in Chinese industrial tree plantation sector: The global resource rush seen from inside China. *The Journal of Peasant Studies*. https://doi.org/10.1080/03066150.2017.1405936.