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Ownership and Effectiveness of China's Aid Projects in Africa*†

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Abstract The notion of 'ownership' has occupied a central place in measuring the effectiveness of North–South cooperation. How is it represented in South–South cooperation (SSC) and how does it affect the effectiveness of SSC? There is no clear answer in the existing literature. In this article, we describe the representation of 'ownership' in SSC and explain how it has affected the process and impact of SSC projects using case studies of three uniformly designed Chinese agricultural aid projects in Mozambique, Tanzania, and Ethiopia. Based on long-term participatory observation and in-depth interviews, we find that 'ownership' in SSC is represented differently from project design to implementation. Divergence and ambiguity exist among different stakeholders on the operation of 'ownership'. 'Co-ownership' of two partners at the local level contributes to the effectiveness of SSC projects while 'de-ownership' and 'forced ownership' have a negative impact on the survival and sustainable development of SSC projects.

Keywords South–South cooperation, ownership, effectiveness, China–Africa agricultural cooperation.

1 Introduction

The notion of 'ownership' has occupied a central place in measuring the aid effectiveness of traditional donors. The consensus is that without recipient-country ownership, i.e. recipient countries (implicitly government) as the primary agents in choosing policies and designing programmes financed by foreign aid (Savedoff 2019), it is impossible to form effective partnerships between donor and recipient. Since the mid-1990s, North–South cooperation (NSC) has strongly advocated having recipients 'in the driver's seat' (OECD-DAC 1996).

Many scholars question theoretically the concept of ownership in terms of its ambiguity. For example, Raffinot (2010) argues

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that market forces, and international norms and rules leave very limited autonomous space in which governments may formulate policy, while donor-driven agendas might be more effective than national ones if donors are more poverty averse and would actually be able to impose poverty reduction on an unwilling government. Saliba-Couture (2011) also highlights the ambiguity of the term, noting how its meaning varies when juxtaposed with qualifiers; for instance, 'government ownership', 'country ownership', 'national ownership', 'democratic ownership', and 'local ownership'. He also emphasises the low levels of effective ownership potentially associated with recipient governments' lack of administrative capacity, financial resources, expertise, and information.

Willem Buiter (2007: 651) considers the term 'country ownership' as 'at best unhelpful and at worst misleading and obfuscating'. Buiter advocates abandoning the concept of ownership altogether. Booth (2012) argues that, rather than explaining lack of ownership, ownership itself should be considered an objective, not a precondition for effective aid.

The global landscape of development cooperation has changed drastically in the last two decades as more and more Southern countries are engaging in aid programmes. By advocating the principles of equality, mutual respect, mutual benefit, and non-interference of partner countries' internal affairs, South–South cooperation (SSC) is considered as a new and alternative paradigm of international development cooperation through creating 'horizontal partnerships', challenging the 'vertical relationship' of NSC. The horizontal approach featuring a demand-driven focus and ownership of partner countries can avoid the inherent inequality between donor and recipient in NSC.

It can also effectively decrease Southern countries' dependence on external assistance through promoting their self-reliance. As Sha Zukang (2010), Under-Secretary-General for Economic and Social Affairs of the United Nations puts it, 'SSC carries little macroeconomic or governance conditionalities, which enhances countries' ownership'. However, questions such as 'Who is supposed to "own"?' and 'What is to be owned?' in SSC are still fundamentally ambiguous (Hasselskog and Schierenbeck 2017). Moreover, the relationship between ownership and effectiveness is becoming more obscure and the actors involved are becoming confused about whether it is a precondition or an indicator of effectiveness.

Being the leading SSC provider, as well as the second largest economy in the world, China's insistence on conducting development cooperation in the framework of SSC has aroused worldwide interest and has also met both censure and praise (Buckley 2013; Gu and Kitano 2018). The changing economic status of China makes the study on China's practice in international development cooperation more interesting to international scholars and China's domestic policymakers (Gu, Li and Zhang, this *IDS Bulletin*). How ownership, the key principle in relation to measuring the effectiveness of NSC, is represented in China's SSC could be a good starting point to understand the challenges and struggles of China's approach. Current discussions on the trends of the 'Southernisation' of NSC and the 'Northernisation' of SSC during and after the Covid-19 pandemic in different roundtables and fora has made the topic even more relevant.

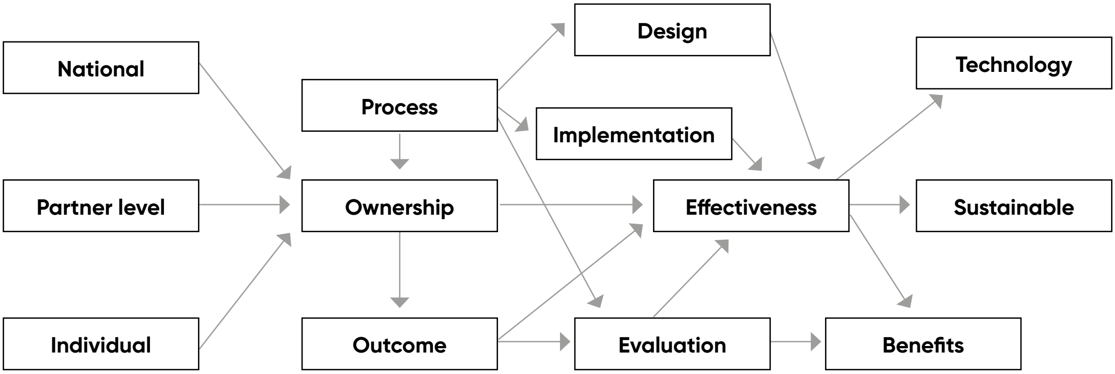
Against this backdrop, this article analyses the representation of ownership (who is supposed to own and what is owned) at the project level in Chinese SSC to see how it is different from that described/practised by traditional donors, and how SSC ownership affects the processes and outcomes of China's aid to Africa. It uses three case studies of Agricultural Technology Demonstration Centres (ATDCs) in three African countries with relatively similar political systems (Geddes, Wright and Frantz 2014): Mozambique, Tanzania, and Ethiopia.[4] A qualitative/process-traced approach to evaluating project-level effectiveness of SSC was utilised. By answering the above-mentioned questions, the research explains the process through which SSC is shaped by traditional development knowledge, while simultaneously reshaping new international development knowledge. The results of this research could inform Chinese and African policymakers of potentially better approaches to collaboration to raise the effectiveness of SSC.

2 Theoretical framework and methodology

Since the 1950s, agricultural assistance has been a priority area for China–Africa strategic partnerships and cooperation. As the flagship Chinese aid project to Africa, ATDCs have aroused the interest of many scholars since their initiation. The existing research on ATDCs falls into two categories: (1) social anthropological research focusing on the process and intention of ATDCs, with the aim of revealing the central features of the projects from the Chinese perspective (Li, Tang and Lu 2017; Xu *et al*. 2016); and (2) more nuanced investigations of the interaction between Chinese stakeholders and local counterparts, revealing the multiple realities and relationships during the process of project implementation (Zhang *et al*. 2019; Gu *et al*. 2016; Scoones, Cabral and Tugendhat 2013). However, there is minimal explanation about the variance of the performance of ATDCs in different African countries from both partner countries' perspectives. Very few studies focus on the cross-country analysis of how host-country systems influence the performance and impact of ATDCs in different contexts. There is a dearth of empirical, comparative research on the analysis of these uniformly designed (and, therefore, theoretically comparable) projects.

Rather than focusing on the outcome or impact of the projects, the research follows the whole process of the projects to see how

Figure 1 **Operationalising the concepts of 'ownership' and 'effectiveness'**



Source Authors' own.

'ownership' was perceived and implemented at the project level. To achieve this, a 'structured focused case comparison' (George 2019) was applied to analyse the variety of different causal patterns and the conditions under which each distinctive type of causal pattern occurs. In addition to the case comparisons, process tracing is used to conduct within-case analysis (Bennett 2010). The comparison is straightforward as all three ATDCs have the same objectives, are uniformly designed, and have received identical support from the Chinese government.

Each case encompasses configurations of similar variables that involve interactions at different stages of project implementation. In order to explore the process of interaction between different stakeholders at different stages of the project, we operationalised the concepts of ownership and effectiveness through disaggregating them (see Figure 1). The representations of ownership at national, partner (implementing units), and individual (Chinese experts and local staff) levels were described to answer the question 'How does ownership work in practice?', from which we could also trace the variation of ownership during the process of the project: design, implementation, and evaluation. Three indicators were used to measure the effectiveness of the project according to the prescribed tasks of the projects: technology transfer, sustainability, and benefit distribution.

As mentioned in Section 1, there is a lack of clarity in the literature on 'ownership' of aid projects which inevitably influences the discussion in this article. In many ways, ownership is a much-used concept in the practice of development, but it has not been rigorously conceptualised academically. In this article, we follow the logic of Chinese project designers and the principles of SSC and explore how this logic was accepted and responded to by the actors at the local level through describing the representation of project-level ownership in SSC. Here, the meaning of ownership goes beyond host government ownership in NSC; it involves more the ownership of the physical property, and the responsibility and benefit generated from the physical property.

The data were collected mainly from primary sources. The processes of project implementation were traced through participatory observation and in-depth open-structured interviews with key informants at different levels of the interactions, to illustrate the representation of ownership. The first author visited and spent some time in the centres in Mozambique and Tanzania between 2013 and 2021. The data on the Ethiopian case were collected by the local co-author (2014–20). Thirty-nine key informants including government officials (9), project directors (7), technical experts (10), evaluation experts (4), and local beneficiaries (9) engaged with project implementation were interviewed, either in person or online. The secondary data were collected from the centres or the official websites. All the evidence was triangulated to ensure accuracy.

3 Representations of 'ownership' in China–Africa development cooperation

3.1 'Uniformity' at the national level

The launch of the ATDCs follows uniform processes featuring mutual ownership and the demand-driven request of African countries. China expressed its intention to support African agriculture through ATDCs at the Forum on China–Africa Cooperation (FOCAC) Beijing Summit in 2006. After this announcement, African countries interested in ATDCs lodged a request through the Chinese Embassy in their country. The agreements prescribed the responsibilities of the two parties: the African country would provide the land, necessary infrastructure, and security of the centre, while the Chinese government would provide RMB40m for its construction. After the centres were completed, the ownership of the property was transferred to the partner country, but the centres were co-managed and operated by Chinese experts and local partners for three years to provide technology transfer and capacity building for local partners with funding support from the Chinese government. All the money from China went to Chinese companies and no budget support went to the host government. This was to ensure the principles of mutual benefit and equality of SSC, with both partners contributing to the project, either in money or labour.

Mozambique, Tanzania, and Ethiopia were all in the first batch of African countries requesting ATDCs. The request reflected the desire for 'national ownership' by the host countries. The three countries all prioritised agricultural development in their national plans during the period in which the project was initiated. Mozambique formulated the Strategic Plan for Agricultural Development (PEDSA,[5] 2010–19) and the National Investment Plan for the Agricultural Sector (PNISA,[6] 2013–17). The Agricultural Sector Development Programme (2006–14), Long-Term Perspective Plan (2011–25), and the First Five-Year Development Plan (2011–15) promulgated by the Tanzanian government all provided targets to be achieved by the agricultural sector in its contribution to national development plans (Zhang, Benjamin and Wang 2021). Ethiopia also published a national five-year development plan (2010–15), the Growth and Transformation Plan (GTP), which emphasised the importance of rapid agricultural transformation through both large-scale commercial farming and smallholder production capacity enhancement.

Interviews with national-level government officials in all three countries confirmed the alignment of the projects with their national development strategies. The African 'agency' in leading the process at the national level was identified by the scholars (for example, Alemu and Scoones 2013). From the Chinese side, the three centres were uniformly designed with the same amount of funding input from China, a similar project duration period, and similar procedures in choosing the implementing units.

Distinct from traditional donors, China does not set target countries for providing aid. Its provision of foreign aid is totally based on the demand-driven request of the African countries and with no political conditionalities attached, but mutual responsibility is a precondition to ensure equality and mutual benefit. The ATDCs were co-designed by each partner country in the arrangement based on these principles, which is understood and accepted by national-level stakeholders. For complete projects such as ATDCs, one thing is very clear: the hardware in the centres belongs to the host country and China will continue to fund the centre until it becomes self-sustaining.

3.2 'Divergence' at partner level

Divergence occurred after the project entered the technical cooperation stage. China together with each partner country designated implementing units for project implementation. Three state-owned agricultural companies won the bids from the open tendering in China and became the implementers of the three centres. The three companies were responsible for the construction and technology transfer until the centres had become self-sustaining. The host governments also designated local agencies, usually the Ministry of Agriculture or one of its affiliated institutions, to operate the centres with Chinese experts.[7]

According to the agreements, the local partners need to dispatch management staff, liaison personnel, and security guards to work in the centres. A technical assistance group consisting of technicians, a translator, and an accountant was dispatched from China as the project commenced the technical cooperation stage. Implementers from China understood that it was the African partner's responsibility to organise training activities for them. The Chinese experts were only required to prepare the curriculum and teach in class or demonstrate in the field. This is a fair arrangement following the principles of SSC, as one policymaker of China's foreign aid reported:

> *To ensure the independence of the local partner, we do not provide direct budget support to the local partners. If they become the employees of the project, it will be difficult to keep their independence. Also, the contribution of the host government is very important to ensure equal partnership between the two countries*.[8]

Again, this approach distinguishes SSC from NSC with the objective of ensuring 'equal and inclusive ownership' and 'mutual accountability'.

However, it is hard for this arrangement to function after implementation starts. As no salary is paid to the local staff, the local partner can only designate its staff to work part-time for the centre. As the location of centres is usually far from the host partner's urban headquarters (HQ), the full-time involvement of local staff is almost impossible. However, the local partner in Mozambique did a better job as the centre is just 23km from the HQ office of the Ministry of Science and Technology (MST). Local liaison staff visited the centre frequently and facilitated some training and demonstration work.

Without the guidance of the local management staff, the Chinese experts in the Tanzanian centre also managed to reach out to different places in Tanzania with the help of the Chinese Embassy. In Ethiopia, the Ministry of Agriculture (MoA) did not manage to assign any experts/staff to the centre due to budget constraints and distance (the centre was more than 80km from the local partner's HQ). The minimal involvement of the local partner in centre management made the transfer of 'ownership' to the local partner difficult.

Divergence also occurred where an ATDC had a different understanding of the concept of 'ownership'. In the Ethiopian case, the Chinese experts were waiting for the host partner to mobilise the local people for training, but the local partner did not dispatch any Ethiopian staff to the centre. When the first group of Chinese evaluators visited the centre in 2013 (one year after the project had commenced the period of technical cooperation), very few training activities had been carried out despite the centre having comprehensive facilities (maize and vegetable cultivation, agricultural machine demonstration, livestock for cattle and chicken rearing, mushroom production, and biogas demonstration), and the strongest team (12 Chinese experts with either master's or bachelor's degrees and field experience) compared with the centres in Mozambique and Tanzania. As the director of the Ethiopia centre stated, 'We are here to demonstrate the technology, not to go out to the field to teach farmers. It is not in the plan'.[9] However, this burden-sharing arrangement could be an obstacle for the centre to function as the host partners do not have the capacity or budget to facilitate the operation.

In the Mozambican case, both partners were flexible in mobilising extra resources to cover participants' training costs such as transportation and subsidies for being off work. To accomplish the task of technology transfer in the centre and to save costs, the local partner also took the initiative to incorporate the training programmes sponsored by other donors into the centre's activities. The Chinese implementing company also cooperated with other Chinese companies in training local farmers. The implementing company in Tanzania has also been working with Chinese companies and undertaking the technology-transfer programmes supported by the Chinese Embassy. Later, the Chinese experts at the Ethiopian ATDC also started to go to the fields to teach local farmers to fulfil the tasks laid out in the national-level agreement. Therefore, the proper function of the centres depends to a large extent on the 'agency' or flexibility of the Chinese implementing companies.

3.3 'Ambiguity' at the individual level

The ambiguity of the concept of ownership can lead to tensions between the Chinese experts and local staff aggrieved at and confused by an unclear division of responsibility. During the process of the centre being transferred to the host government, the issues relating to who should take charge of it were disputed at the individual level. When the then Mozambican president Armando Gebuza visited the centre, he urged the Chinese experts to grow more local vegetables and use local varieties of maize. But a door that had been broken by the students of a Food and Agriculture Organization (FAO) training class still needed to be repaired by the Chinese. The Chinese experts also refused to provide electricity from their generator to the security guards when power went off in the centre. The resulting chain of events was that when some thieves broke in, the security guards did not detect them. The Chinese director was badly injured by the thieves in the ensuing conflict. Fortunately, he recovered, and no property was stolen. However, the ambiguity of ownership (the question of 'Who is responsible for what?') contributed to the partners on the ground feeling ill at ease with each other.

The issue concerning who could use the facilities in the centre and how also began to be disputed, particularly when the facilities are profitable. The chicken-rearing facilities at the ATDC in Tanzania were considered to be the most advanced in the country. The scale of chicken and egg production was large enough for the centre to make a decent profit which could keep the centre self-sustaining after aid from China was phased out. However, in the local partner's eyes, as an aid project, the ATDC should not have been conducting any for-profit activities. As a result, the centre stopped its chicken-rearing project.

Later, the local partner, the Chollima Research Institute, agreed to cooperate with the Chinese experts to relaunch the business by providing a new legal status to the centre on the condition that it bought chicks from the Institute. However, the price of one chick offered by the Institute was about Tsh 7,000 (about US$3) whereas an adult chicken could be sold at Tsh 15,000–20,000 (about US$6.5–8.5). The price of the chicks was too inflated to be accepted by the centre as it was deemed to be losing business. The Chinese experts were also unsure as to whether it was in fact the head of the Institute rather than the Institute itself that wanted to sell the chicks to them. After this event, the centre offered the Institute the opportunity to use the chicken-rearing facilities itself but by the end of 2019, the Institute had not taken any action.[10] In the Ethiopian case, the ATDC was also subject to rigid regulations from the host government, and was not allowed to participate in commercial activities.

These 'ownership' issues deeply affected the Chinese experts' identity in the host countries. Should they be treated as aid agency employees with free diplomatic visas, or should they have to apply for business visas? The Chinese experts in Mozambique had diplomatic visas but the process to apply for or update visas took a long time. All of the centres relied on the host-country liaison person to facilitate the visa process for them. The Chinese experts in Tanzania had to apply for business visas and pay US$250 every three months after the memorandum of understanding (MoU) for diplomatic visas expired. The Chinese experts had argued with the local partner to extend their diplomatic visas but the local response was: 'Since you are coming to aid us, you need to pay us more rather than get a free service'. Moreover, every time the head of the local partner organisation helped them to obtain a visa, they needed to pay him a transportation fee (Tsh 100,000, approximately US$50), a labour fee (Tsh 300,000, approximately US$150), and provide a 'gift' (such as 10kg rice per visa). As one expert said, 'We are working very hard to help them, but it seems that they are not grateful to us. We don't feel we are welcomed by them'.

4 'Ownership' and 'effectiveness' of SSC

In recent years, efforts have been made to measure and evaluate the impact of SSC. Inquiries have frequently assumed that SSC is unique, requiring a totally different set of principles and indicators to be measured. In the previous sections, we described how ownership was represented and understood by the two partner countries in SSC and how it affected the process of project implementation. This section explores how ownership affects the effectiveness of SSC based on evidence from the three centres.

To explore the relationship between 'ownership' and 'effectiveness', we distinguish between three main forms of ownership which have evolved from our case studies:

1 Mutual ownership – this is relatively close to the ideal type of host–donor relationship that SSC aspires to develop. It involves the co-contribution of physical property development

and maintenance, and the introduction of human resources to maintain the project. It requires the mutual respect and responsibility of both partner countries.

2 De-ownership – this occurs when the understanding of 'ownership' of the two partner countries or stakeholders from different levels diverge. One party wants to weaken/expropriate the other party's ownership for its own benefit or to follow its own principles.

3 Forced ownership – this shares some similarities with de-ownership, but it also involves the abandonment of responsibility by one or both parties to force ownership on the one that is not ready to shoulder the whole responsibility.

The impact of these three types of ownership on project effectiveness (technology transfer, sustainability, and profit distribution) will now be explained through the case studies. Technology transfer was a stipulated task by the Chinese government. With funding of RMB15m (approximately US$2.2m), each ATDC needs to train 500 people/times per year and demonstrate advanced Chinese agricultural technology at the centre during the three-year technical cooperation stage. After that, the centre enters the sustainable development stage, which means no further support from the Chinese government and the centres would need to be self-sustaining, either run by the Chinese implementing units or the host partners, or both.

4.1 'Co-ownership' and effectiveness of SSC – the Mozambican case

The Mozambican ATDC is considered the most successful project in terms of effectiveness among the three. The co-ownership of the centre by both partner countries contributes to its success. A consensus has been built that the Chinese experts will stay as long as the centre needs them, and the ultimate goal is to make the centre self-sustaining before it is completely taken over by the host partner. According to one local government official, 'the centre will always be "China–Mozambique" '.[11] Chinese policymakers also think that the centre is an important platform for China–Mozambique cooperation and exchange. This is in large part due to the flexibility and compromise made by both parties at the local level (Zhang *et al*. 2019).

The centre's performance in terms of technology transfer was more than satisfactory. Since 2011, it has selected more than ten rice varieties, six maize varieties, more than 20 vegetable varieties, and two cotton varieties, and transferred more than 20 technologies to local farmers. The Chinese experts have trained over 3,000 local people/times as well as 800 demonstration households. The yield of one of the rice varieties reached 9 tonnes/ha, three times the local yield in 2011. Two rice varieties, one cowpea variety, and one cucumber variety trialled in the centre have been grown nationwide in Mozambique. The yield of a local maize variety grown by Chinese experts has increased to four times (6,750kg/ha) the local yield. The local director of the centre, Otilia Tamele reported that 'Chinese technical experts have made a great contribution to our country' (Fang 2019). The centre also selected 15 promising Mozambican youngsters for short-term training and degree-level education in China.

In terms of sustainability, the centre has explored a survival approach after funding from the Chinese government stopped. Distinct from the Tanzanian and Ethiopian cases, the Mozambican partner has encouraged the centre to conduct business activities, such as selling the vegetables and rice that it produces. The profits were used to maintain the centre facilities. Also, as an important platform for Chinese–Mozambican agricultural cooperation, the centre introduced and cooperated with other Chinese companies investing in Mozambican agriculture. Two more Chinese agricultural parks in Gaza and Sofala provinces were constructed with the involvement of the implementing company of the centre.

Since August 2016, the local partner has been transferred to the Mozambique Ministry of Agriculture and the Institute of Agricultural Research Mozambique (IIAM), which started to get heavily involved in the daily management of the centre. The division of labour between the two parties was clearly stated, based on the principle of wide-ranging consultation, joint contribution, and mutual benefit. The China side is responsible for daily operations, while the local partner has responsibility for mobilising and coordinating local resources. The Chinese experts were still paid by the Chinese implementing companies while the seven local staff working in the centre were paid from the revenue it generated. Since 2017, the centre has been working with the Bill & Melinda Gates Foundation, the World Bank, and other international partners on training programmes in Mozambique.

The centre is still on the way to exploring how to thrive. So far, a large part of the operating costs is still burdened by the Chinese implementing company, which means that the centre cannot be fully turned over to the host partner. With the long-term involvement of China, the vision of the ATDC is to help strengthen the agricultural value chain through attracting more international investment and support to Mozambique. As the business aspect of the centre is thriving, the sense of ownership from the Mozambican side is getting stronger, which might discourage the Chinese party's continuous investment in the centre. One Chinese manager, Mr Y., shared the following story in an interview with the author Zhang Chuanhong:

> *In October 2018, Mr Y., the deputy CEO of the implementing company of China–Mozambican ATDC (Lianfeng company),*

> *was sent to the police station just because he planned to take several sprayers out of the centre. The Mozambican police came and arrested him before he left the centre. The sprayers were transported to Mozambique with other goods in the same batch from the host company of Lianfeng in China. As the centre's geographic location is convenient, some goods for the Friendship Farm (Saisai City, Gaza Province) were also stored in the centre. But when the Mozambican partners saw Chinese partners taking the materials from the centre, they reported this to the police. It was hard for the Chinese company to explain the complicated situation to the police. Mr Y. stayed in the police office for a few hours before the police officer was persuaded that he was not a thief. But the sprayers were kept in the centre.*[12]

4.2 'De-ownership' and effectiveness of SSC – the Tanzanian case

The ATDC in Tanzania has been maintained solely by continuous support from China. The centre has been performing well in terms of technology transfer. As mentioned above, more than 3,000 farmers had been trained by the Chinese experts by the end of 2019. Since its implementation, the centre has worked very hard on self-financing through trying to create more operational income with the introduction of joint venture partners and business activities.

> By setting up the commercial company in Tanzania and fully making use of the centre's advantages in technical demonstration and extension, the centre will carry out various kinds of business in the field of crop farming, poultry-rearing, and food processing, in order to achieve profit to compensate the expenditure gap from public service in the centre. Meanwhile, the governments should give the centre corresponding policy support in the related aspects. (China-Tanzania ATDC 2013)

Since 2013, the Chinese implementing company has tried to extend its industrial chain by selling its fresh vegetables, quality rice, chickens, and eggs, and maize for feedstuff to the markets. However, the commercial activities run by the centre were questioned by the host partner, which thought that as an aid project it was not qualified for business activities and that if the centre wanted to do business, it should be registered as a business entity paying tax to the local government. But the fact that the ownership of the centre belongs to the Government of Tanzania, not the Chinese company, blurs the legal status of the centre. Under this scenario, the centre has had to shut off all its business activities. At present, the centre only functions as a pure aid platform undertaking different agricultural aid projects on training and technology transfer. The operation of the centre has been barely maintained by the Chinese implementing company. The local partner is not willing to run the centre itself as it lacks capacity to do so.

The host partner's expropriation of Chinese 'ownership' for using the facilities of the centre to do commercial activities without claiming 'ownership' and responsibility for itself makes it impossible for the centre to achieve the goal of sustainable development. To a large extent, the centre has lost its characteristics as an SSC project through the de-ownership of both partners. The focus on technology transfer may exert the long-term effect of 'blood creation'[13] for Tanzania. However, through the de-ownership process the host partner lost the opportunity to prosper with the centre. After the Chinese experts leave, the centre will be hard to sustain.

4.3 'Forced ownership' and effectiveness of SSC – the Ethiopian case

The Ethiopian case failed due to its expectation of mutual contribution from the host government. After ownership of the centre's hardware was transferred to the host government, the Chinese implementing company naively waited for the local partner to take the lead. This passive attitude resulted in the poorest performance of the centre across the three case studies. The major objective of the Chinese implementing unit was to accomplish the task assigned by the Chinese government through ensuring the smooth transfer of ownership to the host government. However, the limited involvement of the local partner and communities along with the context of socio-political unrest made the transfer an impossible mission. After Chinese experts were forced to leave due to political instability in 2018, the centre was looted. It was not until July 2019 that the ATDC was officially handed over to the Ambo Research Centre, which has converted it into one of its research sub-centres. Since, except for the buildings, much of the original technology demonstration fields have been considerably damaged.

From this case, it is clear that the consistent commitment of the Chinese partner is vital to keep the centre surviving and thriving. 'Forced ownership' of a project by the host country or totally giving 'ownership' to the Chinese partner does not work under the principle of SSC and might be detrimental to the effectiveness of SSC.

5 Conclusions

Host-country ownership has been regarded as a central precondition for the aid effectiveness of NSC for a long time, but its ambiguity and paradoxicality have aroused controversy in both academic and policy circles. Very few studies have focused on the issue of ownership in SSC and its impact on programme effectiveness. In this research, we have revealed that project-level ownership is far more complicated than the simple idea of national ownership advocated by traditional donors. Ownership under the SSC framework has also proved difficult and requires the consistent commitment and flexibility of the cooperating providers during implementation. Representation of ownership varies among different levels of stakeholders as well as at different stages of project implementation. The approach to operating ownership by the implementing partners matters more than the uniformed concept of ownership reached at national level for the success of China's SSC projects.

The results show that co-ownership may be the best approach for the effectiveness of SSC while de-ownership and forced ownership make sustainability and the survival of the SSC projects unlikely. These latter two approaches indicate that ownership in SSC is different from NSC as both partner countries need to contribute and shoulder responsibilities. The case studies also reveal that donorship in SSC is unfeasible as it is impossible for the SSC providers to control the whole process. This could be one advantage of SSC over NSC as it can overcome the inherent inequality between donors and recipients in NSC. From a long-term perspective, the whole ownership of the host country could be incubated. However, we concede that the research cannot cover the long-term impact of the project as it is only focused on the process of the project that is still going on. More research on the long-term impacts of a larger number of centres is needed to reveal the bigger picture in the future.

Space and time constraints mean that we are not able to present political economic analyses of the case studies to reveal the hidden causes that lead to the variations in performance of the ATDCs in the three countries. However, our preliminary findings reveal that the project-level stakeholders play a more important role for the effectiveness of SSC than was expected when the national-level design was undertaken. As with so many studies of aid programme implementation, 'the devil is in the detail'. The implementation of SSC is not as easy as most policymakers might expect as host countries take time to accept this type of new cooperation modality. Patience is needed for SSC providers to 'cultivate' an equal partnership with the host partners. These results may help inform Chinese and African policymakers of potentially better approaches to effective development cooperation under the framework of SSC.

Notes

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3 Dawit Alemu, Manager, Bilateral Ethio-Netherlands Effort for Food, Income and Trade (BENEFIT) Partnership programme in Ethiopia.
4 Based on a data set from 2010 (latest data available) that classifies types of autocracies, the three countries are considered 'party-based' autocracies, meaning they have a one-party dominant system.
5 PEDSA = Plano Estratégico para o Desenvolvimento do Sector Agrário.
6 PNISA = Plano de Investimento no Sector.
7 In the three countries respectively, the Ministry of Science and Technology (MST) in Mozambique (later transferred to a Institute of Agricultural Research Mozambique (IIAM) research institute under the Ministry of Agriculture), the Chollima Research Institute in Tanzania, and the Ambo Research Center of the Ethiopian Institute of Agricultural Research (EIAR) were the local partners of the ATDC projects.
8 June 2015, Beijing.
9 October 2014, ATDC in Ethiopia.
10 Author interview, July 2019.
11 July 2014, Maputo.
12 Author interview, 28 July 2021.
13 Translated from the Chinese, this often-used phrase means that the project can survive without getting aid from external sources.

References

Alemu, D. and Scoones, I. (2013) '**Negotiating New Relationships: How the Ethiopian State is Involving China and Brazil in Agriculture and Rural Development**', *IDS Bulletin* 44.4: 91–100 (accessed 16 August 2021)

Bennett, A. (2010) 'Process Tracing and Causal Inference', in H.E. Brady and D. Collier (eds), *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, 2nd ed., Lanham MD: Rowman and Littlefield

Booth, D. (2012) '**Aid Effectiveness: Bringing Country Ownership (and Politics) Back In**', *Conflict, Security and Development* 12.5: 537–58, DOI: 10.1080/14678802.2012.744184 (accessed 16 August 2021)

Buckley, L. (2013) '**Chinese Agriculture Development Cooperation in Africa: Narratives and Politics**', *IDS Bulletin* 44.4: 42–52 (accessed 16 August 2021)

Buiter, W.H. (2007) ' "Country Ownership": A Term Whose Time Has Gone', *Development in Practice* 17.4–5: 647–52

China-Tanzania ATDC (2013) '**Centre Document**' (in Chinese) (accessed 30 September 2021)

Fang, Y. (2019) '**China–Mozambique Demonstration Centre: An Important Platform for New Varieties, New Technology and New Model for Trial and Demonstration**', *Farmers' Daily*, 28 November (in Chinese) (accessed 30 September 2021)

Geddes, B.; Wright, J. and Frantz, E. (2014) 'Autocratic Breakdown and Regime Transitions: A New Data Set', *Perspectives on Politics* 12.2: 313–31

George, A.L. (2019) '**Case Studies and Theory Development: The Method of Structured, Focused Comparison**', in D. Caldwell (ed.), *A Pioneer in Political and Social Sciences*, Pioneers in Arts, Humanities, Science, Engineering, Practice series, vol 15, Cham: Springer

Gu, J. and Kitano, N. (2018) '**Introduction: Beyond Aid – The Future of Development Cooperation**', *IDS Bulletin* 49.3: 1–12 (accessed 16 August 2021)

Gu, J.; Zhang, C.; Vaz, A. and Mukwereza, L. (2016) 'Chinese State Capitalism? Rethinking the Role of the State and Business in Chinese Development Cooperation in Africa', *World Development* 81: 24–34

Hasselskog, M. and Schierenbeck, I. (2017) '**The Ownership Paradox: Continuity and Change**', *Forum for Development Studies* 44.3: 323–33, DOI: 10.1080/08039410.2017.1384530 (accessed 16 August 2021)

Li, X.; Tang, L. and Lu, J. (2017) *Demonstration of New Development: Narratives of China's Agricultural Technology Demonstration Centres in Africa*, Beijing: Social Science Literature Press (in Chinese) (accessed 30 September 2021)

OECD-DAC (1996) ***Shaping the 21st Century: The Contribution of Development Co-Operation***, Paris: Organisation for Economic Co-operation and Development (accessed 30 September 2021)

Raffinot, M. (2010) '**L'appropriation (ownership) des politiques de développement : de la théorie à la pratique**', *Mondes en développement* 149: 87–104 (accessed 16 August 2021)

Saliba-Couture, C. (2011) '**L'appropriation et la Déclaration de Paris: Un discours convaincant, mais en sommes-nous convaincus?**', *Canadian Journal of Development Studies* 32.2: 180–95, DOI: 10.1080/02255189.2011.596030 (accessed 16 August 2021)

Savedoff, W.D. (2019) ***What Is 'Country Ownership'? A Formal Exploration of the Aid Relationship***, CGD Working Paper 519, Washington DC: Center for Global Development

Scoones, I.; Cabral, L. and Tugendhat, H. (2013) '**New Development Encounters: China and Brazil in African Agriculture**', *IDS Bulletin* 44.4: 1–16 (accessed 16 August 2021)

Sha, Z. (2010) '**South–South Cooperation and Capacity Development**', speech by Under-Secretary-General for Economic and Social Affairs Mr Sha Zukang, Bogota, Colombia, 24 March (accessed 30 September 2021)

Xu, X.; Li, X.; Qi, G.; Tang, L. and Mukwereza, L. (2016) 'Science, Technology, and the Politics of Knowledge: The Case of China's Agricultural Technology Demonstration Centers in Africa', *World Development* 81: 82–91

Zhang, C.; Benjamin, W.A. and Wang, M. (2021) 'The Contribution of Cooperative Irrigation Scheme to Poverty Reduction in Tanzania', *Journal of Integrative Agriculture* 20.4: 953–63

Zhang, C.; Li, X.; Connerley, E.F. and Wu, J. (2019) 'Role Tension and Adaptation in a Chinese Agricultural Aid Project in Mozambique', *Journal of International Development* 31.3: 231–46

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