

# Engaging the private sector

Marketing Neglected and Underutilised Species for biodiversity-based  
climate change adaptation.

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Koolman Consulting

Klaas Koolman

Christburger Str. 11

10405 Berlin

Tel. +49 (0)172 2051201 – [mail@koolmanconsulting.com](mailto:mail@koolmanconsulting.com)

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## List of abbreviations

|        |   |
|--------|---|
| CBD    | Convention on Biological Diversity                        |
| CGIAR  | Consultative Group on International Agricultural Research |
| DFI    | Development Financial Institutions                        |
| DFID   | Department for International Development                  |
| GIZ    | Gesellschaft für Internationale Zusammenarbeit            |
| IFAD   | International Fund for Agricultural Development           |
| IFI    | International Financial Institutions                      |
| IPCC   | Intergovernmental Panel on Climate Change                 |
| LDC    | Least Developed Country                                   |
| MDG    | Millennium Development Goals                              |
| NUS    | Neglected and underutilised species                       |
| OECD   | Organisation for Economic Co-operation and Development    |
| PPP    | Public Private Partnership                                |
| SDG    | Sustainable Development Goals                             |
| SME    | Small and Medium Enterprise                               |
| UNCTAD | United Nations Conference on Trade and Development        |
| UNDP   | United Nations Development Programme                      |
| UNEP   | United Nations Environment Programme                      |
| UNIDO  | United Nations Industrial Development Organisation        |
| VC     | Value Chain   |

## Abstract

Climate change is happening and, according to the Intergovernmental Panel on Climate Change, it is “extremely likely” (95% level of confidence) that it is man-made. The changes in global climate will affect the whole planet; however, it is the economically disadvantaged who will be disproportionately affected. Most communities in the least developed countries (LDCs) still depend on agriculture as their main source of income. Future changes in climate conditions will massively affect agricultural systems, especially in LDCs. In order to reduce the vulnerability of those agricultural systems and the communities that rely on them, adaptation measures need to be taken. Climate change resilience and the adaptive capacity of the agricultural sector are determined by the diversity of genes, species, and ecosystems, among other factors. The successful implementation of adaptation strategies, including the fostering of agrobiodiversity, requires human, natural, technical, and financial resources. Private entities need to be involved and engaged to mobilize these financial resources and technical capacities. Private companies and corporations have incentives to prepare their businesses for climate change. One of the strongest incentives is the fact that, because of climate change, some of today’s agricultural or food business models may simply not survive in the future. Private actors may also be incentivised to act by the emergence of new business models, new product opportunities, and of differentiation opportunities in existing markets. Successfully attracting private sector entities to engage in agrobiodiversity-based climate change measures depends on success factors such as relevance, incentives, capacities, and perspectives. Further, along with successful cultivation and functioning supply chains, market access is crucial. In addition, demand for neglected or underutilised species products has to be triggered through communication and the right branding. However, under all circumstances the utilisation of NUS has to comply with the principles of fair and equitable sharing of benefits.

# 1 Introduction

Climate change is happening and it is “extremely likely” that it is man-made; the most recent Intergovernmental Panel on Climate Change (IPCC) report states that they are 95 percent certain that global warming is both occurring and man-made (IPCC, 2013). Carbon emissions into the atmosphere are the main reason for climate change. The consequences of climate change can already be observed and will become even more critical in the future, with rising average temperatures, rising sea levels, acidification of oceans, changes in water cycles, and other substantial changes in climate (IPCC, 2013). This will lead to more severe weather events such as droughts, heat waves, storms, and a general change in weather patterns.

The changes in global climate will affect the whole planet, however they will disproportionately affect the economically disadvantaged (World Bank, 2010). The impacts of climate change and the vulnerability of poor communities to climate change vary. However, climate change will reinforce existing issues (OECD, 2003). In particular, climate change will pose a real threat to food security in many countries in Africa, Asia, and Latin America (OECD, 2013).

Current research is beginning to indicate that the effects of climate change are inevitable. Thus, we need to adapt to these new circumstances and act to tackle the challenges. One of the biggest challenges in this respect is the world’s food security and the economic sustainability of communities. Most communities in the least developed countries (LDCs) still largely depend on agriculture as their main source of income (World Bank, 2013). In many LDCs the agricultural sector plays a critical role as a source of food security and income for the poor, and as an engine of growth in other sectors of the economy (IFAD, 2011).

The future changes in climate conditions will massively affect the agricultural systems, especially in LDCs. In order to make those agricultural systems and ultimately the communities less vulnerable, adaptation measures need to be taken (Biagini, Miller, 2013). Adaptation measures reduce climate vulnerability, and increase ‘climate-resilience’ and long-term sustainability (Biagini, Miller, 2013). Agrobiodiversity will play an important role in making agricultural systems more resilient to climate change impacts. Climate change resilience and the adaptive capacity of the agricultural sector are influenced by the diversity of genes, species, and ecosystems (Bedmar, Halewood, Lopez Noriega, 2015).

The successful implementation of adaptation strategies, including the fostering of agrobiodiversity, requires human, natural, and financial resources (Brooks, Adger, 2005). Consequently, countries with limited economic resources, low levels of technology, poor information, skills, and infrastructure, unstable or weak institutions, and inequitable empowerment and access to resources have little capacity to adapt to the changes implied by climate change (IPCC 2001). Therefore, these countries require support to tackle the challenges. “Successful private sector engagement in adaptation will

catalyse greater investment in vulnerability reduction” (Biagini, Miller, 2013); this might also accelerate the replication of climate adaptation measures.

## 2 Engaging the private sector in agrobiodiversity

At the international level, institutions and organisations such as the United Nations, the Global Environment Facility, World Bank, OECD, UNDP, UNEP, CGIAR, IFAD, national governmental development aid organisations like the UK DFID and the German GIZ, and many more are all involved in the process of engaging the private sector in agrobiodiversity. At the local level, governments, local organisations, civil society, and local communities are the main drivers behind adopting measures to reduce climate change vulnerability.

However, in order to really leverage the local and international efforts and in order to mobilize financial resources and technical capacities, private entities need to be involved and engaged (Biagini, Miller, 2013). Current dialogues on sustainable development goals (SDG) see private sector actors as the main drivers of sustainability initiatives in the future, as the world moves from the millennium development goals (MDG) to the post-2015 agenda (UNIDO, 2014). According to an OECD survey, private sector awareness of climate change risks is increasing, however, only few respondents have considered adaptation options (Agrawala et al., 2011). Although it is obvious even without scientific research that the agricultural sector will be the industry most affected by climate change, still the industry's initiatives to adapt to climate change have been minimal.

The barriers for the private sector to adapt to climate change are mainly rooted in their limited financial planning horizons and the fact that, often, business strategy planning does not extend beyond a certain point in time (Biagini, Miller, 2013). Furthermore, unlike, for example, investments in energy efficiency improvements, which can immediately reduce costs and contribute to profitability, investing in improving climate resilience in the agricultural sector only generate returns if and when extreme events occur, or, if and when the overall climate situation changes. Hence, investments today will only pay off far in the future.

The question is not only about the barriers, it is also about the incentives for engagement of the private sector. Unlike other industries such as energy, telecommunications, transport etc., where national governments in some cases own companies or act as stakeholders, the agricultural sector and the food industry are probably amongst the most privatised sectors worldwide. As a result, it is business incentives rather than policy or regulation that will trigger agricultural and food companies to act. It should also be noted that public policies and regulations can be manipulated by the private sector; this is assumed to particularly be the case in LDCs, where the private sector often strongly influences policy making.

In order to successfully engage the private sector in agrobiodiversity initiatives, we shall first look at the actors within the private sector.

### 3 Actors in the private sector

In this paper, we will differentiate between two groups of private sector actors. The first one is the group of private, for-profit companies. The second group, which will be referred to as 'others', is a catch-all group which subsumes several different forms of actors.

Private companies exist in different sizes and forms. There are large corporations (multinational and local), individual companies (multinational and large local ones), local small and medium-sized enterprises (SMEs), and micro-companies (such as start-ups, both international and domestic). Further, there are local farmers, cooperatives, smallholders and outgrowers, which, in many developing countries and LDCs, form the backbone of local agricultural systems. Smallholders and cooperatives are by definition private sector actors. In this paper, we consider this group as actors within the value chains, rather than financial and technical contributors to climate change measures.

Apart from the above-mentioned private companies and corporations, there are a number of different private sector actors that fall under the term of 'others', such as foundations (e.g. The Council on Sustainable Development, World Economic Forum), academic institutions, business schools, networks of individuals, think tanks, consultancy firms, impact investment companies, and others.

The focus of this paper is how agrobiodiversity value chains can enhance climate adaptation and nutrition security in order to foster poor and marginalised communities. Accordingly, we concentrate on the engagement of private sector actors from the first group: local SMEs, local companies, international companies and international corporations. For relevance, we also limit our discussion to actors from two industries: the agricultural sector, e.g. producers of agricultural goods; and the food industry, e.g. producers, manufacturers, wholesalers, marketers and others.

In order to successfully engage private sector actors in agrobiodiversity projects, it is important that we understand the different forms this engagement can take. The following section discusses this issue.

## 4 Forms of private sector engagement

### 4.1 Private-Private vs Public-Private

Public private partnerships (PPP) have been a mode of private sector engagement since the 1990's. PPPs are in place and contributing to progress in many development contexts. PPPs engage private sector actors to contribute to specific development projects together with a public partner. The incentives can be manifold, such as tax incentives, access to raw materials or intellectual property sources, strategic advantages such as access to buyers or customers, etc.

Whereas the will to engage in a PPP is most often triggered by one of the above-mentioned incentives, some private sector actors also engage in socially beneficial private-private partnerships. These private engagements are characterised by the fact that there is no public partner and no official external incentive. Private engagements are usually driven by the respective private actor's business goals, e.g. producers of chocolate engaging in health care and insurance for cocoa farmers.

## 4.2 Modalities of private sector engagement

Current research has found that there are typically six different types of private sector engagement in development that go beyond a contractual partnership (Di Bella et al., 2013).

### *Policy Dialogue*

Policy dialogues are discussions among stakeholders that aim to bring about or encourage specific changes in policy or behaviour, or adopt best practices and standards. Policy dialogues play an important role within development work, as they can improve corporate practices and set industry standards or establish rules and regulations (Di Bella et al., 2013).

### *Knowledge sharing*

Knowledge sharing activities aim at exchanging experiences or best practice among organisations, firms, and other entities. Knowledge sharing is, unlike policy dialogues, not particularly geared at changing the policies or frameworks of development cooperation but rather at learning (Di Bella et al., 2013).

### *Technical cooperation*

Technical cooperation is mostly provided in the context of development finance or grants. It is assistance or expertise provided to facilitate the design or implementation of a specific project or to assist an actor in carrying out a specific function. Technical cooperation aims to enable private sector actors to effectively engage in development cooperation or improve operational capacities and effectiveness (Di Bella et al., 2013).

### *Capacity development*

Capacity development activities like assistance, knowledge generation, and training, aim to develop the abilities of actors to perform functions, solve problems, and achieve objectives (Di Bella et al., 2013). Capacity development differs from knowledge sharing as it includes a learning and training component, in order to improve the abilities of the respective actors.

### *Grants & donations*

Grants and donations – transfers made in cash, goods, or services for which no repayment is required – do not necessarily imply institutionalised partnerships. In many instances, they are provided to

support a specific project that reflects some area of shared interest between organisations and firms (Di Bella et al., 2013).

### *Financial investments*

Financial investments are, unlike grants and donations, transfers for which payment is required. This includes leveraging private finance and promoting private sector investment through the provision of finance in the form of loans, private equity, guarantees, and infrastructure funds. Development financial institutions (DFI) and international financial institutions (IFI) are the main providers of financial investments. However, private impact investment groups or single investors are also contributing to development finance more and more frequently.

In most of the cases where private actors engage in development projects, the above-listed modalities blend together. Specific research targeted at private sector engagement in climate change adaptation initiatives showed that private sector engagement mostly takes place in five ways (Biagini, Miller, 2013):

- Awareness raising, including potential risks and response measures
- Capacity building to train private entities how to manage climate change risks
- Dialogues on policies, regulations, and institutional infrastructure
- Public-private-partnerships and efforts that promote private sector responses to climate change
- Entrepreneurship development that opens new private sector opportunities for reducing climate vulnerability

## 5 Private sector engagement in agrobiodiversity

Climate change adaptation measures in the agricultural sector take the form of both short- and long-term actions. Short-term responses include, for example, the provision of crop and livestock insurance, social safety nets, new irrigation schemes and local management strategies, as well as research and development of stress resistant crop varieties (UNEP, 2008). Long-term responses include re-designing irrigation systems, developing land management systems and raising finances to sustain adoption of those systems (UNEP, 2008). Private investments in agriculture and agrobiodiversity conservation in developing countries are limited. More than 90 percent of agricultural research and development in developing countries is derived from the public sector (UNEP, 2008). “Attracting investment from the private sector for agrobiodiversity conservation and agricultural development is a challenge, as the private sector traditionally has not been interested in crops without a good market value” (UNEP, 2008). This is problematic as niche crops and so-called neglected and underutilised species (NUS) are contributors to agrobiodiversity and, as diverse ecosystems are more resilient to climate change impacts (CBD, 2003), play an important role in the climate change resilience of ecosystems: “Conservation of biodiversity and maintenance of

ecosystem structure and function are important climate change adaptation strategies because genetically-diverse populations and species-rich ecosystems have a greater potential to adapt to climate change” (CBD, 2003).

We need to increase the level of diversity in ecosystems by fostering the use of neglected and underutilised species in agriculture and food production. In order to achieve results in these endeavours, cross-sector collaboration among different sectors and industries is vital (UNIDO, 2014). The private sector, as described earlier, will play an important role. “Businesses have a built-in motivation to see development succeed” (UNIDO, 2014).

This is why private sector actors need to be engaged in fostering agrobiodiversity through the cultivation of NUS. Somebody simply needs to show interest in growing a NUS crop. This interest can be triggered through external incentives, as explained above (e.g. tax remittances, co-funding, etc.), but the strongest drivers of private sector engagement lie within the actors themselves.

## 6 Incentives for engagement

### 6.1 Resilience as competitive advantage

One of the strongest drivers for engagement is the fact that the basis for current business models may simply not exist in the future. However, this has largely not yet been recognised by private sector actors. Research suggests that climate change will affect both biotic (pest, pathogens) and abiotic (solar radiation, water, temperature) factors in crop systems, threatening crop sustainability and production (Lin, 2011). More diverse agro-ecosystems with a broader range of traits and functions will be able to perform better in changing environmental conditions (Matson et al. 1997, Altieri 1999). Accordingly, every actor whose business model is in any way based on ecosystem services should pay attention when the topic of the climate change is raised. Based solely on their own financial interest, private sector actors should be attracted to climate change resilient ecosystems. One reason why private sector actors do not engage in climate change adaptation measures for ecosystems, such as the utilisation of NUS and niche crops, is that they haven’t learned about the risk that climate change poses for their particular business model. In addition, they have not yet realised the advantages they might gain over those actors who do not prepare for the future. Therefore, an obvious solution to this issue would be educating private sector actors about the consequences of climate change for their business models.

### 6.2 New business models

Climate change will not only offer the opportunity for competitive advantage within existing private sector business models; it will also create completely new business models. Integrating NUS into ecosystems is likely to require new value chains or segments of value chains, with opportunities for new value chain actors. For example, growing a new species in a certain region will require not only someone to actually cultivate it, but also someone to harvest, process, and transport it. For cases

where the newly utilised species is different to existing crops, to the extent that it requires an entirely new value chain, new business models will arise.

### 6.3 New products

Along with the competitive advantage offered by climate change resilient agricultural ecosystems, private sector actors can also benefit from new products that might be derived by utilising previously NUS. The pharmaceutical industry has long been active in what is called ‘bioprospecting’ to find new and promising medicinal plants or ingredients (Lead et al., 2005). However, it is not just the pharmaceutical industry, food manufacturers too are interested in finding new and promising ingredients. For example, consider the often-cited example of Andean grains (AG) such as Quinoa, Amaranth, and Cañihua. These crops were not consumed outside of their native regions for centuries. However, recently, catalysed by international research efforts, the cultivation of Andean grains had intensified. This has led to higher yields and increased crop quality and, as ‘ancient grains’, AGs have now reached a completely new level of popularity, especially on markets in the U.S. and Europe. This is largely as a result of the beneficial nutritional traits AGs possess, combined with the fact that AG are innately gluten free. However, AGs are just one example of previously neglected and underutilised species that have come to new fame. The Açai berry from the Amazon rainforest, Moringa from South-Asia, Maca from Peru, and Chia seeds, to name just a few, are now very popular around the world. New products can be an interesting incentive for the private sector to engage in agrobiodiversity-based climate change adaptation measures.

### 6.4 Differentiation on existing markets

Engaging in biodiversity-based climate change measures might create another incentive for the private sector through differentiation (UNCTAD, 2014). Companies from the food sector continuously need to innovate, especially if they are selling to or on developed markets. Generally, developed markets are saturated, both concerning different products or types and concerning different varieties of these products. As a result, food manufacturers are constantly on the lookout for new products that will allow them to differentiate themselves in saturated markets. Previously neglected and underutilised species might represent interesting opportunities for differentiation. However, companies must ensure that they can obtain access to sources of novel and niche products. A popular modality for public-private interactions in this field are public-private-partnerships, where private actors, such as companies from the food sector, engage in projects together with public entities. Incentives for these engagements are not only of a financial nature, but also of a real strategic nature.

### 6.5 External communication

Together with strategic advantages of differentiation on existing, mature markets, leadership positioning as an environmentally-conscious or ethical and fair trading company can also motivate private sector engagement in biodiversity-based projects. It is not just the fact that companies who

engage in projects have first access to certain resources that incentivises the private sector, but also the fact that these engagements can be communicated positively to external stakeholders. As an example, the UK-based cosmetics company LUSH Ltd. successfully communicates how they engage in the origin countries of their raw ingredients (LUSH, 2015).

## 7 Success factors for private sector engagement

Research has been done on the success factors enhancing value chain development for NUS from a holistic perspective. This research encompasses the whole value chain (VC), and considers how the market-oriented development of NUS by building value chains and integrating resource-poor actors into them can improve food security, conserve biodiversity, stabilise agro-ecosystems, and generate income (Will, 2008). Here, we will take a specific look at the success factors from a private sector perspective.

### 7.1 Relevance for the private sector

One of the most important success factors, if not the most important one, is the relevance of a specific biodiversity engagement for the private sector actors. Private sector actors will only act if they regard engagement in biodiversity based climate change measures as relevant for their own businesses. This relevancy depends on a number of different factors. One factor might be the direct financial or economic benefit of the engagement. For example, better buying prices might encourage a private sector actor to engage in the production value chain. Another factor that might indicate relevance for private sector actors is the future economic potential of agrobiodiversity products. In addition, engagement should be viewed positively by the public. Engagements that cannot be communicated or do not have a communication value to a specific target audience have low or no value to private actors. Further, the fact that a new or transformed agricultural production system based on increased biodiversity might be more resilient to future climate change-induced shocks or climate change effects can be a viable incentive. Additionally, increased yields from rediscovered NUS may also represent an interesting incentive for private sector actors.

### 7.2 Capacities of the private sector

In order to engage in agrobiodiversity-based climate change measures, private sector actors also need to possess the required capacities. This starts with the right mind-set. Along with understanding the financial and economic benefits of engagement, private actors also need to recognise that engagement can be beneficial for all parties involved and will contribute to the bigger picture of climate change adaptation, biodiversity conservation, nutrition improvement, and income generation. There is only marginal value in promoting engagement to private sector actors who don't understand the flow-on benefits to a bigger picture.

As well as this crucial mindset, private actors, especially foreign companies, need to have certain capacities to interact in “unknown territory”. This includes language skills, intercultural communication skills, and the will and capability to travel to foreign countries, among others.

Finally, alongside the financial capacity that is a given requirement for any investment, private actors will also require specific technical skills. For example, this includes knowledge about cultivation, harvesting, and processing.

### 7.3 Consumer benefits

In order to engage private sector actors in biodiversity-based agricultural adaptation measures, to make market-viable, the cultivation, processing, and marketing of NUS must be beneficial to at least one group within the process (Koolman, 2014). The more people and groups that can benefit from NUS and its market-oriented development, the better.

The economic benefits encourage farmers, traders, and industries to get involved and invest into the production and marketing of NUS and NUS-based products. If there is no economic benefit for anybody in the whole value chain, then commercialisation will be difficult. Consumer benefit is one of the strongest triggers for demand, and demand is the direct source of economic benefit for producers. Consumers have to adopt and consume the products that agriculture and industry are producing, as the consumer is the last element in the value chain. As a result, the preceding elements of the value chains should analyse the benefits that a product offers consumers.

There are many ways consumers can benefit, for example a product can offer health benefits, a new flavour, nutritional benefits, easier use, easier preparation, or consumption. Anything that makes the new product stick out from the previously used “relevant set” of products will be interesting to consumers.

### 7.4 Consumer demand

As mentioned above, consumer demand and consumer benefits are closely linked. If a product, a crop, or a NUS does not offer a specific consumer benefit, it will be difficult to trigger demand. Without sufficient market demand, the economic benefits will be limited and the incentives for private sector actors will be low. Accordingly, consumer demand is a crucial success factor for private sector engagement in biodiversity-based climate change adaptation measures.

### 7.5 Market access

Market access for producers is vital. Without functioning supply chains, products from biodiversity-based climate change adaptation projects will struggle to reach local villages, let alone a regional, national, or even international market. However, not every biodiversity-based product needs to hit the international market. Indeed, the advantages and disadvantages of a wider commercialisation of a NUS need to be carefully assessed. However, if this assessment reveals that the result of a wider commercialisation would be positive, then ensuring market access is essential.

Unlike the two preceding factors “demand” and “benefits”, that either exist or not, market access can be created and the development of supply chains can be supported. Accordingly, market access shouldn’t be a bottle neck for the successful commercialisation of NUS for biodiversity-based climate change adaptation measures.

## 8 Conclusions

Private sector engagement in biodiversity-based climate change adaptation measures largely depends on the existence of the relevant incentives. Indeed, there is no way to engage the private sector without these incentives. These incentives do not necessarily have to be direct financial benefits, but rather could be incentives inherent to each respective project or engagement. It is therefore important to take the viewpoint of the private sector when assessing the feasibility of a biodiversity-based project and conduct a marketability study. It is also important to carry out this study early in the process in order to identify potential stumbling blocks and to gain initial insights as quickly as possible. This will be crucial for engaging private sector involvement at an early stage.

Along with the incentives that could trigger private sector interest mentioned above, a couple of key success factors need to come together. Two key factors are consumer benefit and consumer demand. If there is no clear benefit from a certain product relative to existing solutions, then commercialisation will be difficult. Additional factors such as the capacities of the actors involved and market access are also crucial. However, these can be developed and supported.

Engaging the private sector in biodiversity-based climate change adaptation measures is not impossible, but to succeed it will need a practical and market-based approach.

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