West African Studies

Women and Trade Networks in West Africa



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Women and Trade Networks in West Africa

Under the direction of
Marie Trémolières and Olivier J. Walther

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SAHEL AND WEST AFRICA Club Secretariat

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The Sahel and West Africa Club

The Sahel and West Africa Club (SWAC) is an independent, international platform. Its Secretariat is hosted at the Organisation for Economic Co-operation and Development (OECD). Its mission is to promote regional policies that will improve the economic and social well-being of people in the Sahel and West Africa. Its objectives are to improve the regional governance of food and nutrition security and improve the understanding of ongoing transformations in the region and their policy implications through regional, spatial and forward-looking analyses. SWAC Members and partners are Austria, Belgium, Canada, CILSS, the ECOWAS Commission, the European Commission, France, Luxembourg, the Netherlands, Norway, Switzerland, the UEMOA Commission and the United States. SWAC has memorandums of understanding with the NEPAD Agency and the University of Florida (Sahel Research Group).

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Foreword

Women occupy a central place in African societies and economies, and they should also be central to the public policies and strategies of development partners. There are abundant arguments in favour of this focus substantiated by scientific literature and case studies. The Sahel and West Africa Club (SWAC/OECD) Secretariat proposes a comprehensive and singular perspective on the activities of women traders through their networks.

This reflection places the issue in the context of a major change: urbanisation. West Africa's population is expected to double in the next 25 years with the majority of this growth projected for urban areas. This shift will precipitate profound social and economic changes creating new opportunities for the empowerment of women. Urban growth and related changes in food consumption patterns are driving increased demand for processed agricultural products that rely on women's labour and input.

To illustrate these opportunities and document the constraints faced by women, this report focuses on the trans-regional organisation of the rice trade to reveal the role that actors play within the information and governance networks that make up this trade. The participation of women is analysed through the relationships that exist between actors – both women and men – using an innovative methodology called social network analysis.

This approach, still rarely used in the sphere of development, is particularly useful in contexts where institutional frameworks are still poorly applied or where the informal economy dominates. By spatialising relationships between individuals, the analysis highlights the peripheral position of women. In particular, women are weakly connected to the most central actors in trade networks. They do not as often occupy the brokerage roles that generate greater value added through their capacity to connect the different stages of market value chains on both sides of a border.

Social network analysis illustrates the importance of social capital for achieving success and building resilience in the face of economic, climatic or security risks. The findings open up policy avenues for better national and regional co-ordination of programmes that promote women's empowerment as well as at the local level, where investments can be targeted depending on the positioning and role of each player within their networks. They also call for decision makers to seize upon the socio-economic opportunities that more sustainable and better urban development could provide women.

Dr. Ibrahim Assane Mayaki
CEO, New Partnership for Africa's Development (NEPAD) Agency and Honorary President, Sahel and West Africa Club (SWAC)

The team and acknowledgments

The editorial and drafting team at the SWAC/OECD Secretariat includes:
Marie Trémolières, Executive Director, marie.tremolieres@oecd.org

With the help of:
Lia Beyeler
Freerk Boedeltje
Nadia Hamel
Sylvie Letassey
Joan Nimarkoh

Graphic design:
Daniel Krüger / Grand Krü, daniel@grandkrue.de and Martin Rümmele (maps and figures)

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Scientific direction, field co-ordination, mapping and drafting were provided by **Olivier J. Walther,** Ph. D. Dr. Walther is a visiting associate professor at the Center for African Studies at the University of Florida, associate professor of political science at the University of Southern Denmark and consultant for SWAC/OECD. owalther@ufl.edu

External contributors:
Lawali Dambo, professor and researcher at the Department of Geography, Abdou Moumouni University of Niamey (Niger). lawali.dambo@gmail.com

Leena Koni Hoffmann, Ph. D., fellow of the Royal Institute of International Affairs (Chatham House) and technical advisor to the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS) Secretariat. lhoffmann@chathamhouse.org

Hye Ryeon Jang, Ph. D. candidate at the Department of Political Science of the University of Florida. hrjang52@ufl.edu

The team thanks the following for their contribution to the writing of this report: Laurent Bossard, Philipp Heinrigs, SWAC/OECD Secretariat; Leonardo A. Villalón, Brenda Chalfin, Gregory Kiker, Renata Serra, University of Florida; Al Howard, Rutgers University; Paul Melly, Chatham House; Simon Renk, Désirée Zwanck,World Food Programme; Michel Tenikue, Luxembourg Institute of Socio-Economic Research; Dorcas Ansah, WIEGO; Stella Avallone, Austrian Foreign Ministry; Evelyn Ayivor, USAID; Maty Ba Diao, Permanent Inter-State Committee for Drought Control in the Sahel; Djibo Bagna, Network of Farmers' Organisations and Agricultural Producers of West Africa; Elaine Bellezza, Bellezza Global Consulting; Rebecca Benson, Liberia; Huguette Bokpe Gnacadja, Women in Law and Development in Africa; Sara Bolliri, Embassy of Luxembourg in Burkina Faso; Marleen Bosmans, Belgian Development Agency; Monique Calon, Ministry of Foreign Affairs of the Netherlands; Mata Coulibaly, New Partnership for Africa's Development; Macoura Coulibaly Dao, Foumbolo commune; Janine Crocker, Global Affairs Canada; Jean-René Cuzon, French Development Agency; Keffing Dabo, Permanent Inter-State Committee for Drought Control in the Sahel; Filomena Delgado, Praia City Council; Florence Denebeye, Women's

processing platform, Mandoul; Stéphane Devaux, European Commission; Kafui Djonou, USAID; Khady Fall Tall, Association of West African Women; Steven Geiger, Swiss Agency for Development and Cooperation; Nathalie Gisabo Gahunga, African Development Bank; Mahalmoudou Hamadoun, Permanent Inter-State Committee for Drought Control in the Sahel; Hava Karrie, MASHAV Carmel International Training Center; Jennifer Karsner, USAID; Marie Kodi Nedoumal, Ministry of Women, Chad; Noel Kossonou, West Africa Food Markets Programme; Barbara Ky, West African Economic and Monetary Union; Camille Le Bloa, French Development Agency; Roselma Mariza Lima Évora, Cape Verde Institute for Gender Equality and Equity; Boris Maver, Swiss Agency for Development and Cooperation; Bernice McLean, New Partnership for Africa's Development; Aissata Miningou, West African Economic and Monetary Union; Rebecca Nelson, Daughters of Bomi; Rabya Nizam, European Commission; Cory O'Hara, USAID; Maïmouna Ouedraogo, Ministry of Women, National Solidarity and the Family, Burkina Faso; Sandra Oulate Fattoh, Economic Community of West African States; Jean-Marc Pradelle, French Development Agency; Kaffa Rakiatou Christelle Jackou, Ministry of Public Service of Niger; Jean-Pierre Salambéré, Swiss Agency for Development and Cooperation; Naomi Saydee, Ministry of Gender, Children and Social Protection of Liberia; Adama Soumaré, WIEGO; Olivia Tran, Global Affairs Canada; Madeline Tsimi Mba, Rikolto; Sandrine Vanhamme, Ministry of Foreign Affairs Belgium; Raphaël Vogelsperger, International Fertilizer Development Center; Umar Abubakar, Usmanu Danfodio University of Sokoto; Nuhu Umar Jabo, Sokoto; Garba Salifou, Dendi Local Government; Abubacar Samaila, Kamba Township Chiefdom; Moustapha Koné, Hassane Saley Alimatou, Djibri Matankari, Gado Idrissa, Antarou Hassane, Ali Wata, Moustapha Antarou, Adamou Ango Ibro, Tankari Dagi Sanoussi, Chaibou Rabo, Mistouri Fondo Issa, Abdoul Djalil Ibrahim, University of Niamey; Inoussa Dandakoé, Amadou Tinni, Marcos Ali, Maazou Moussa, Tinni Oumarou, Malanville City Hall; Hamidou Amadou, Gaya City Hall; Nasser Ibrah, Gaya; the women and men of the Dendi who participated in the field surveys.

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Acronyms and abbreviations

AFD	French Development Agency (Agence française de développement)
AfDB	African Development Bank
AFJCI	Association of Women Lawyers of Côte d'Ivoire
AFRISTAT	Economic and Statistical Observatory for Sub-Saharan Africa
AGRA	Alliance for a Green Revolution in Africa
ANPIP	Nigerien Association for the Promotion of Private Irrigation
BMGF	The Bill and Melinda Gates Foundation
BMZ	German Federal Ministry for Economic Co-operation and Development
CARD	Coalition for African Rice Development
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CVIGEE	Cape Verde Institute for Gender Equality and Equity
DAC	OECD Development Assistance Committee
DDC	Swiss Agency for Development and Co-operation
DFID	Department for International Development (United Kingdom)
DGD	Belgian Development Co-operation
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization
FDFA	Federal Department of Foreign Affairs (Switzerland)
FIAP	Feminist International Assistance Policy (Canada)
GADN	Gender and Development Network
G7	Group of Seven
G20	Group of Twenty
IANWGE	United Nations Inter-Agency Network on Women and Gender Equality
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
INSAH	Sahel Institute
IPU	Inter-Parliamentary Union
IRC	International Red Cross
IUCN	International Union for Conservation of Nature
LARES	Laboratoire d'analyse régionale et d'expertise sociale
LGBTI	Lesbian, gay, bisexual, transgender and intersex
NEPAD	New Partnership for Africa's Development
NGO	non-governmental organisation
NRD	National Rice Development Strategy
OECD	Organisation for Economic Co-operation and Development
OXFAM	Oxford Committee for Famine Relief
ROPPA	Network of Farmers' Organisations and Agricultural Producers of West Africa
SDG	Sustainable Development Goal
SIGI	Social Institutions and Gender Index
SWAC	Sahel and West Africa Club
SWEDD	Sahel Women's Empowerment and Democratic Dividend Project
UN	United Nations
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund
UNIFEM	United Nations Development Fund for Women
UNRISD	United Nations Research Institute for Social Development
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WAC	World Agroforestry Centre
WAHO	West African Health Organisation
WAWA	Association of West African Women
WFP	World Food Programme
WIEGO	Women in Informal Employment: Globalizing and Organizing

Abbreviations in figures 5.2 and 5.3

AAH	Action Against Hunger	Action contre la faim
Africa Rice	Africa Rice	Africa Rice
AfDB	African Development Bank	Banque africaine de développement
AIB	African Investment Bank	Banque africaine d'investissement
AWDF	African Women's Development Fund	Fonds africain pour le développement de la femme
AWFishNET	African Women Fish Processors and Traders Network	African Women Fish Processors and Traders Network
ASUSU	ASUSU SA	ASUSU SA
Austria	Austria	Autriche
Belgium	Belgium	Belgique
Bellezza Global Consulting	Bellezza Global Consulting	Bellezza Global Consulting
Benin	Benin	Bénin
BoPInc	BoPInc	BoPInc
Burkina Faso	Burkina Faso	Burkina Faso
Canada	Canada	Canada
CRS	Catholic Relief Services	Catholic Relief Services
CECI/PAERIZ	CECI/PAERIZ	CECI/PAERIZ
Chad	Chad	Tchad
CIPE	CIPE National Endowment for Democracy	Fondation nationale pour la démocratie
Cities Alliance	Cities Alliance	Cities Alliance
COMESA	Common Market for Eastern and Southern Africa	Marché commun de l'Afrique orientale et australe
CIIP	Competitive Industries and Innovation Program	Competitive Industries and Innovation Program
CCSSC	Conseil consultatif de la société civile	Conseil consultatif de la société civile
CCFT	Conseil consultatif des femmes du Togo	Conseil consultatif des femmes du Togo
CNCCR	Conseil national de concertation et de coopérations des ruraux	Conseil national de concertation et de coopérations des ruraux
Côte d'Ivoire	Côte d'Ivoire	Côte d'Ivoire
CNFA	Cultivating New Frontiers in Agriculture	Cultivating New Frontiers in Agriculture
Daughters of Bomi	Daughters of Bomi	Daughters of Bomi
Denmark	Denmark	Danemark
Earth Stewards	Earth Stewards	Earth Stewards
EAC	East African Community	Communauté d'Afrique de l'Est
ECOWAS	Economic Community of West African States	Communauté économique des États de l'Afrique de l'Ouest
ENERGIA	ENERGIA	ENERGIA
EIB	European Investment Bank	Banque européenne d'investissement
EU	European Union	Union européenne
FEFA	Federation of Women Entrepreneurs and Business Women of ECOWAS	Fédération des femmes entrepreneures et femmes d'affaires de la CEDEAO

FONGT	Fédération des ONG du Togo	Fédération des ONG du Togo
FPBA	Fédération des producteurs du bassin de l'Anambé	Fédération des producteurs du bassin de l'Anambé
FIARA	Foire internationale de l'agriculture et des ressources animales	Foire internationale de l'agriculture et des ressources animales
FCG	Fonds commun genre	Fonds commun genre
FCPF	Forest Carbon Partnership Facility	Forest Carbon Partnership Facility
France	France	France
Gambia	Gambia	Gambie
Gender Centre	Gender and Human Rights Documentation Centre	Gender and Human Rights Documentation Centre
Germany	Germany	Allemagne
Ghana	Ghana	Ghana
GIEFEA	GIE des femmes étuveuses d'Anambé	GIE des femmes étuveuses d'Anambé
GARI	Global Alliance for Resilience Initiative	Global Alliance for Resilience Initiative
Guinea	Guinea	Guinée
Guinea-Bissau	Guinea-Bissau	Guinée-Bissau
IFDC	International Fertilizer Development Center	International Fertilizer Development Center
IFAD	International Fund for Agricultural Development	Fonds international de développement agricole
ILO	International Labour Organization	Organisation internationale du travail
Japan	Japan	Japon
Kolda Region	Kolda Region	Région de Kolda
KAF	Konrad Adenauer Foundation	Fondation Konrad Adenauer
Liberia	Liberia	Libéria
Luxembourg	Luxembourg	Luxembourg
Make Sense	Make Sense	Make Sense
Mali	Mali	Mali
MASHAV	MASHAV Carmel International Training Center	MASHAV Carmel International Training Center
Mauritania	Mauritania	Mauritanie
Mercy Corps	Mercy Corps	Mercy Corps
NCBA	National Cooperative Business Association	National Cooperative Business Association
Netherlands	Netherlands	Pays-Bas
AU	African Union	Union africaine
Niger	Niger	Niger
Nigeria	Nigeria	Nigéria
No Agric No Deal	No Agric No Deal	No Agric No Deal
OXFAM	OXFAM	OXFAM
Pencum Senegal	Pencum Senegal	Pencum
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel	Comité permanent inter-États de lutte contre la sécheresse dans le Sahel
PSI	Population Services International	Population Services International
REPAO	Réseau sur les politiques de pêche en Afrique de l'Ouest	Réseau sur les politiques de pêche en Afrique de l'Ouest

ROPPA	Network of Farmers' Organisations and Agricultural Producers of West Africa	Réseau des organisations paysannes et de producteurs de l'Afrique de l'Ouest
Rikolto	Rikolto International	Rikolto International
Rockefeller Foundation	Rockefeller Foundation	Fondation Rockefeller
Save the Children	Save the Children	Save the Children
Senegal	Senegal	Sénégal
Sierra Leone	Sierra Leone	Sierra Leone
SOS Faim	SOS Faim	SOS Faim
Spain	Spain	Espagne
Sweden	Sweden	Suède
Switzerland	Switzerland	Suisse
Togo	Togo	Togo
TradeMark East Africa	TradeMark East Africa	TradeMark East Africa
TRIAS	TRIAS	TRIAS
UDER	Union départementale des étuveuses de riz de Douna	Union départementale des étuveuses de riz de Douna
URZC	Union des riziculteurs de Zou-Collines	Union des riziculteurs de Zou-Collines
UEMOA	West African Economic and Monetary Union	Union économique et monétaire ouest-africaine
UNER	Union nationale des étuveuses de riz	Union nationale des étuveuses de riz
URFER	Union régionale des femmes étuveuses de riz des Collines	Union régionale des femmes étuveuses de riz des Collines
UN	United Nations	Nations Unies
United States	United States	États-Unis
UFHBCA	Université Félix Houphouët-Boigny-Cocody-Abidjan	Université Félix Houphouët-Boigny-Cocody-Abidjan
WAFM	West Africa Food Markets	West Africa Food Markets
WAWA	West Africa Women Association	Association des femmes de l'Afrique de l'Ouest
WIE	Women in Informal Employment	Women in Informal Employment
WiLDAF	Women in Law and Development in Africa	Femmes, droit et développement en Afrique
WAC	World Agroforestry Centre	Centre international pour la recherche en agroforesterie
World Bank	World Bank	Banque mondiale
WHO	World Health Organization	Organisation mondiale de la santé
YPB	Young Peace Builders	Young Peace Builders

Executive summary

Women make a very important contribution to the food economy of West Africa. From Dakar to N'Djamena, they participate actively in the production, processing and sale of agricultural products. West African women also continue a long tradition of trading, which supports the process of regional integration. Yet these activities that are vital to the growth of the West African economy, face many obstacles that limit the participation of women in trade.

Based on an unprecedented relational approach, this report analyses the structure of West African social networks in which women play a particularly central role. It identifies both the socio-economic barriers that restrict the opportunities of women in the food system, and the constraints that affect the governance networks aimed at promoting women's entrepreneurship in the region.

A male-dominated trade network

The first step in examining the place of women in agricultural trade was to map the business relationships between 1997 entrepreneurs in the region. This analysis shows that in the rice sector in Benin, Niger and Nigeria, no variable is more discriminating than gender. Men have more experience, more education and earn five times more than women. These differences make it more difficult for women to access financial services and they reduce their social and spatial mobility.

An analysis of the business relationships in the rice trade confirms that women's activities are limited by the overall structure of the business network, which imposes an unequal division of labour and relegates women to structurally peripheral positions relative to men. Women are less numerous, have fewer business partners, are less likely to act as intermediaries and are less well-connected than men to the most central actors. The gender gap is particularly striking among actors with strong local roots and extensive business connections: just one-fifth of actors with this level of social capital are women.

Nigeria dominates networks

The surveys conducted for this report show that three-quarters of entrepreneurs form business relationships within their own country. In this informal market, Nigerian entrepreneurs have a dominant position by virtue of the wide access they enjoy to financial services, which allows them to act as wholesalers, and the transport links that allow them to ship rice to the markets in their country. This example of bottom-up integration remains largely unaffected by the policies implemented by national governments and their international partners, and shows the ability of local entrepreneurs to leverage the demand generated by population growth and urbanisation.

A fragmented governance network

A survey of 101 organisations active in the development of women's entrepreneurship in West Africa identifies the most centrally placed institutional actors and how they co-ordinate their public policies. It reveals that international organisations and some countries in West Africa and Europe play a central role in the gender governance network. A summary of the programmes, priorities and partnerships of nine organisations involved in this field of governance then illustrates the diversity of initiatives designed to give women a greater role in the productive and trading economy in West Africa. In conclusion, an analysis of the relations between individuals in these organisations suggests that the governance network

that supports women's economic empowerment remains fragmented: nearly one actor in four is disconnected from the main component in the network.

Functional and institutional obstacles

The report shows that the functional and institutional obstacles faced by West African entrepreneurs are inherently diverse. Actors involved in the rice sector find that the greatest barriers to business are illegal levies imposed at borders and taxes that are perceived as excessive or unfair. Local entrepreneurs would like to see more investment in the physical infrastructure of markets, transport and access to credit. Women are proportionately more likely than men to complain about dilapidated or lacking commercial infrastructure. For decision makers and gender experts, women's professional activities are chiefly restricted by education, access to financial services and property, cultural norms and the judicial system.

Public policies based on social networks

Development policies need to be based on the social networks in which women operate if they are to promote women's entrepreneurship in West Africa.

- *Strengthening women's social capital*. Development policies must encourage growth in business relations within the communities in which women live. These relationships, deeply embedded in the local culture, offer a guarantee of solidarity and protection from the many uncertainties involved in doing business in this region. Policies should also promote the establishment of business relations that allow women to access resources that are not available to them locally. This objective mirrors that of the development policies aiming to encourage the movement of goods within the region, by reducing non-tariff trade barriers, establishing one-stop border posts, and building rural and intercity roads between production and consumption areas.
- *Promoting the co-ordination of the governance network*. A more sustained effort needs to be made to integrate the various initiatives launched by national governments, and international and non-governmental organisations to promote women's entrepreneurship. This collaborative effort will also require greater formal and informal dialogue between experts from each individual organisation, who have to this point been working relatively independently of each other. A strategy to increase the number of informal links in this governance network would help to improve co-ordination within and between the organisations involved in promoting women's entrepreneurship.

Chapter 1

The role of women in the West African economy

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Chapter 1 highlights the crucial contribution of West African women to the region's food and commercial economy. It demonstrates that these activities are subject to numerous socio-economic and institutional obstacles that limit the participation of women in commercial activities. This chapter analyses these gender inequalities using a relational approach that maps relationships between economic and political actors in social networks. The first case study explores the value chains of the rice trade between Benin, Niger and Nigeria and identifies barriers that limit the participation of women in areas of production and commercialisation. The second case focuses on governance networks and highlights the challenges faced by public policies designed to promote the economic participation of women in the region.

Key messages

- Women play an important role in the West African food economy. In border regions, they are indispensable actors in the local trade that underpins regional integration.
- Within a network, women producers and retailers are at the periphery of the value chain while the majority of brokers are men.
- Strategies reinforcing women's social capital are thus needed to address their economic marginalisation.
- The governance network in charge of promoting women's economic activities is fragmented.

Women play an important role in the West African food economy. Although there are regional differences in the distribution of agricultural tasks, women are active participants in the cultivation of vegetable, grain, and tuber crops and are frequently involved in harvesting operations. From Dakar to N'Djamena, women participate in the processing and sale of certain agricultural products such as shea, peanuts and cassava that are equally well-suited to production in rural and urban environments. They are involved in a large proportion of sales of vegetables, tubers, fruits, fish and certain grains in the markets in the region. Women perform these functions in addition to the household chores and childcare that remain predominantly feminine responsibilities in West Africa.

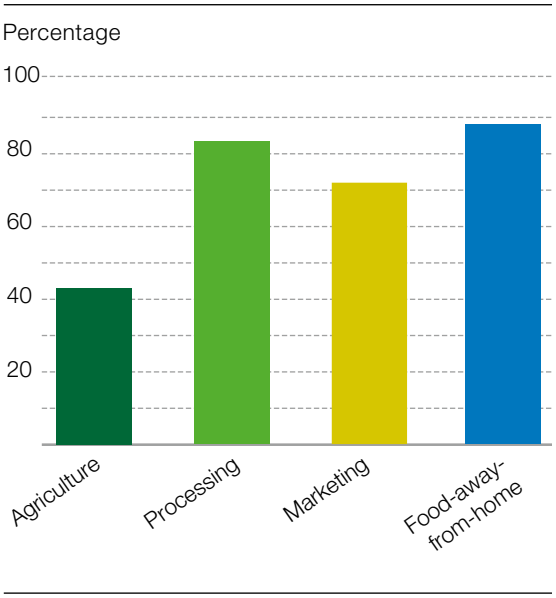
The contribution of women represents an average of 40% of the work related to agricultural production in sub-Saharan Africa. According to the most recent statistics, this proportion is 37% in Nigeria and 24% in Niger (Palacios-Lopez et al., 2017). This lower overall participation rate for women in West Africa can be partly explained by their higher participation in other segments of the food economy. In West Africa, women make up 80% of employment in the processing, 70% of distribution and almost 90% of sales of ready to consume agricultural products (Allen et al., 2018) (Figure 1.1).

In parallel with activities related to the food economy, West African women also perpetuate a long tradition of short-distance commerce, which deftly exploits regulatory differences between countries in the region. In border regions, in particular, women are important actors in the local trade that underpins processes of regional integration. Between the twin cities

of Gaya and Malanville, for instance, numerous women merchants cross the Niger-Benin border daily, on foot, by canoe and using motor vehicles to distribute their products to neighbouring markets (Walther, 2015). They have also developed commercial networks at the regional scale that link zones of production to large consumer markets. After the Nana-Benz of Lomé, enriched by the textile trade of the 1980s, a new generation of business women have emerged that have links to suppliers in the Middle East and South-east Asia (Sylvanus, 2013).

These activities that are crucial to West African economic growth, however, still face numerous obstacles that limit the participation of women in commercial exchange (WFP, 2016–17; 2016). The relegation of many women to activities that are, generally, less lucrative, riskier and that face greater uncertainty, create gender inequalities that hinder women, in particular, and more generally affect West African development (World Bank, 2012; Ferrant and Kolev, 2016).

Figure 1.1
Share of women's employment by sector in West Africa



Source: Allen et al. 2018

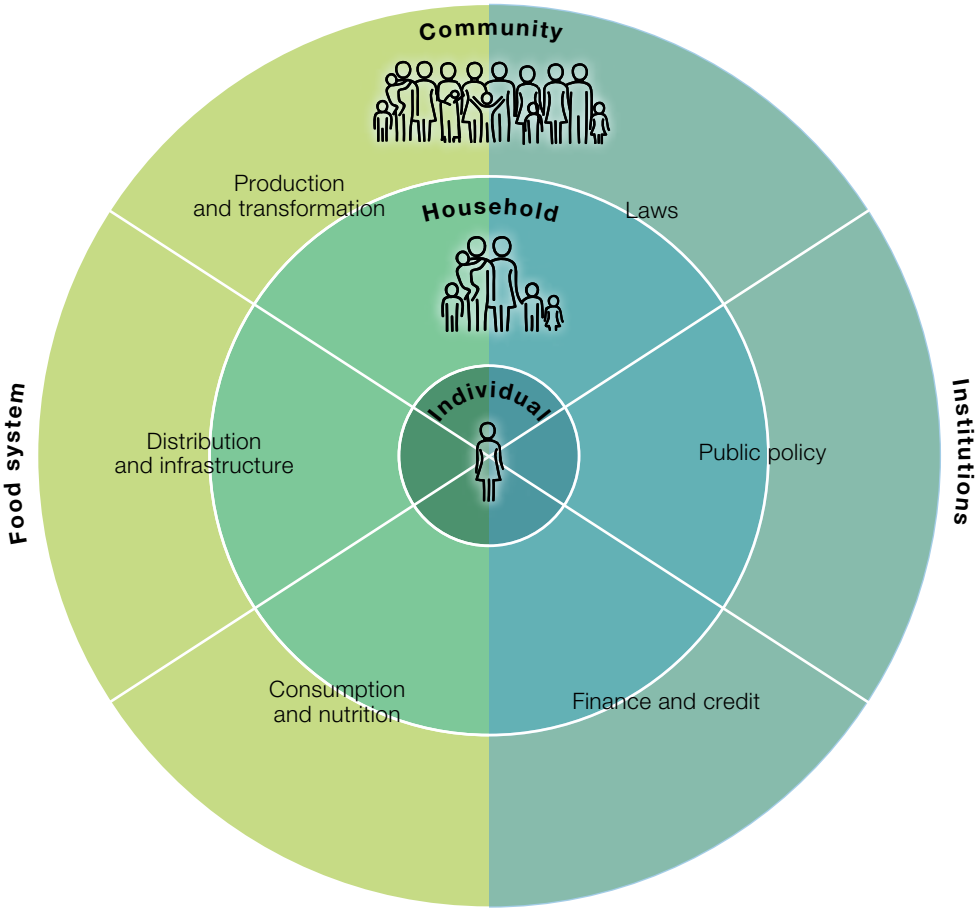
WHAT TYPES OF OBSTACLES LIMIT THE ECONOMIC PARTICIPATION OF WOMEN?

By engaging in an innovative study of women's commercial networks in West Africa, this report analyses the socio-economic obstacles that limit opportunities for women to participate in the food economy (Figure 1.2). These obstacles exist both in agricultural production as well as in processing, distribution and consumption activities. In many regions, certain social norms define the activities that women are eligible to participate in at the village scale and limit their ability to frequent public places where they could engage in commercial activities. Women also face numerous barriers to mobility and are often forced to walk long distances to reach markets because they lack access to motor vehicles and are frequently subject to harassment at borders.

Certain institutional barriers limit the economic activity of West African women. These obstacles include formal and customary laws, public policies and access to financial institutions. These have major repercussions for women's capacity to access agricultural property and sufficient financial resources to develop their commercial activities. In many societies, women inherit less than men or are encouraged to renounce their financial rights in favour of their spouse (Bouchama et al., 2018) (Figure 1.3). Women's rights to marriage and divorce, where they exist legally, are often subverted by custom and is another area of inequality between the sexes. As a result, the women that do marry and have children early are less educated (OECD, 2014). Women are rarely represented in the political sphere, on land commissions, tribunals or in tribal leadership, which constitutes another barrier to the implementation of public policies aimed at women producers and merchants in the region.

The socio-economic and institutional obstacles encountered by women are likely to limit their commercial participation on three levels (Figure 1.2). At the individual level, women in West Africa are affected by inequalities that limit their professional prospects. The age of marriage of women, their level of education,

Figure 1.2
Factors that limit the participation of women in commercial activities

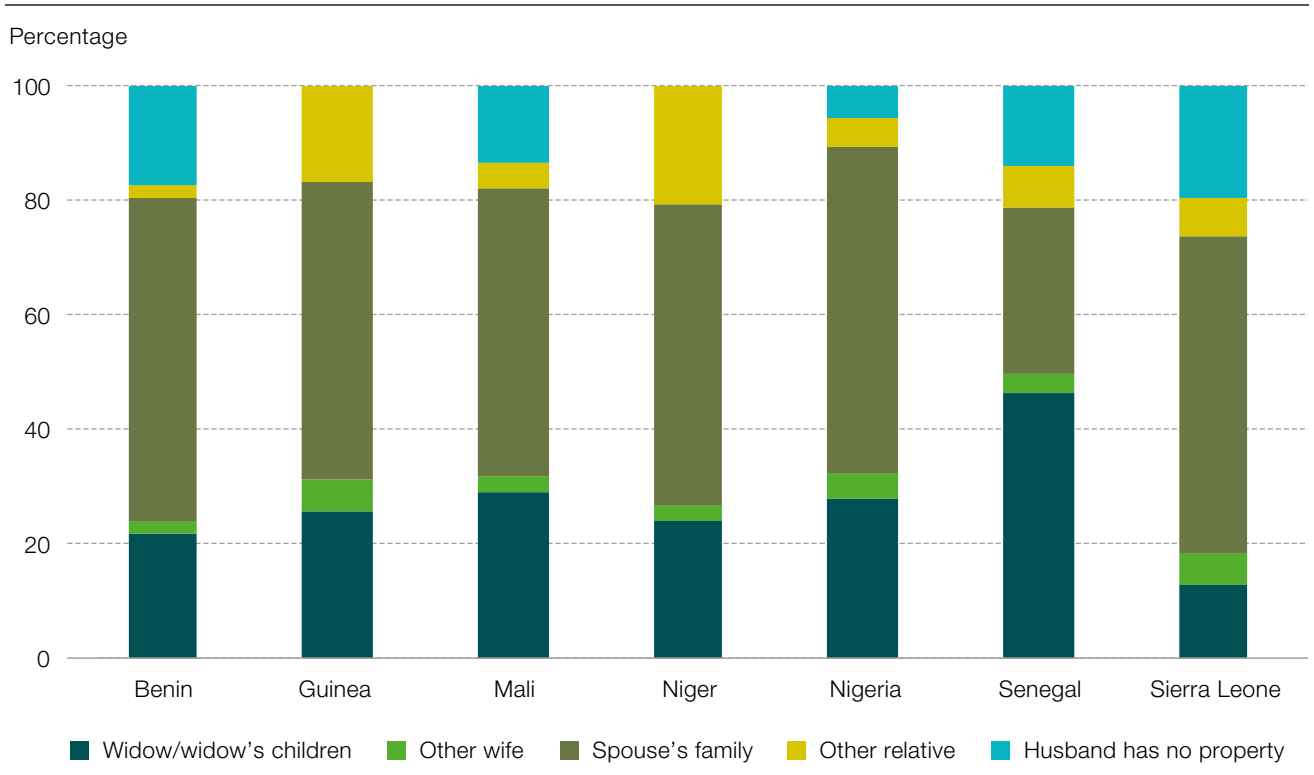


Source: Adapted from Hoffmann et al. 2017

their access to care and their political representation all tend to be lower than that of men. These inequalities have important impacts on the economic activity of women as a result of the growing demand for professional skills in areas of production and commerce. Similarly, inequalities exist between women in men in each household to the extent that each spouse has different influence over household spending where savings and care of children are the highest priorities. Ultimately, gender inequalities are reproduced at the community level where the interests of women conflict with village norms or customary rights.

These gender inequalities are social constructs rather than attributes of birth. They are based on a collection of relations of dependence, of power and solidarity codified by each society in the form of social norms, customary practices and formal laws. The social position of women within these social networks determines in large part their degree of autonomy with respect to men and, ultimately, the success of their commercial undertakings. If women play a peripheral role in agricultural value chains, it is difficult for them to realise equal benefits as men because they don't have access to the central positions that generate the most wealth. In other words, it is the relationships that exist between men and women in their homes and communities that are the direct causes of the gender inequalities observed in West Africa in the domains of agricultural production and commerce. It is, therefore, essential to better understand how women are linked with other actors in production and distribution networks in order to implement public policies that reduce their marginalisation.

Figure 1.3
Who inherits the majority of goods in West Africa?



Source: Bouchama et al. 2018

A RELATIONAL APPROACH TO WOMEN'S ECONOMIC ACTIVITY

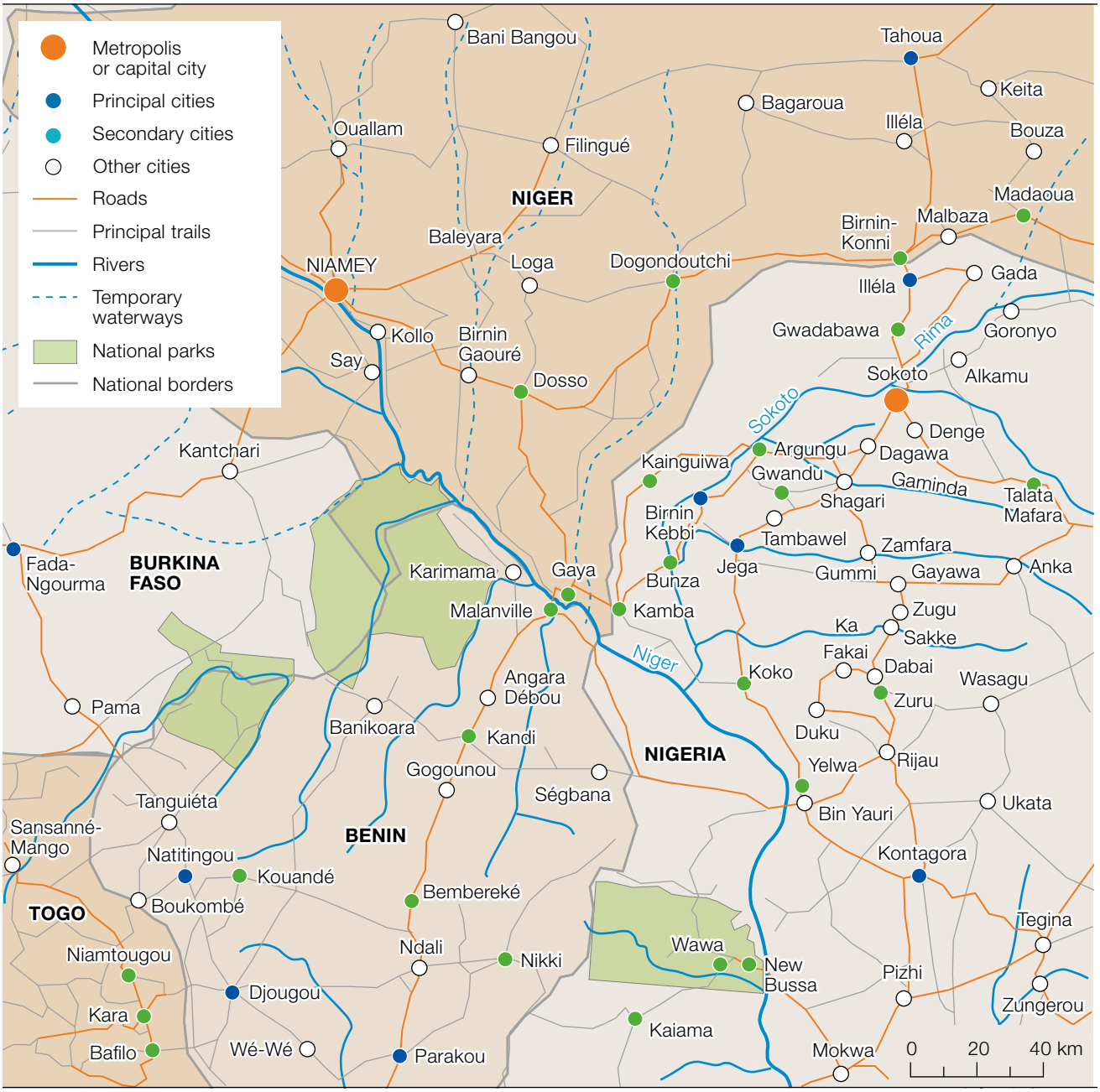
The factors that limit women's access to markets are investigated using a methodology called social network analysis or SNA, which allows researchers to map relationships between social actors in a specific sector or region. This approach can help identify actors and power relations that might not always be revealed by traditional research methods but that, nonetheless, influence the socio-economic success of individuals and constrain the effectiveness of public policies. While this approach has long been used in the study of Western societies, SNA has gained popularity in the scientific community and amongst policy makers since the beginning of the 2010s (OECD/SWAC, 2017; Walther and Renk, 2017).

Two studies analyse the structure of social networks within which women play a particularly central role in Western Africa. Their results aim to help craft public policies better suited to the constraints and structural opportunities that women face in engaging in economic activities. These local and regional studies are unprecedented in their relational approach, which has been rarely applied to questions of gender and development strategies in West Africa. Each study addresses a domain that could legitimately promote the participation of women in commercial exchange: the food system and regional governance.

- The first study focuses on the productive and commercial activities of West African women. It maps business relationships between producers, intermediaries and retailers along the entire value chain of local rice, a sector within which women are particularly active. This research was conducted in a portion of the Niger River valley called the Dendi, a region where the Nigerian demand stimulated by the urbanisation of the continent and changing diets have stimulated increased production in

Map 1.1

Cross-border region of the Dendi



Source: Walther 2008

the neighbouring countries of Benin and Niger (Map 1.1). It highlights the position of women in the agricultural sector, the structural constraints on their activities and the barriers that they face in accessing markets.

- The second study focuses on the governance of the activities of West African women. It traces governance links between states, regional, international and non-governmental organisations and the private actors charged with facilitating the economic activities of women in the region. This study was conducted across fifteen countries of the Economic Community of West African States (ECOWAS), plus Mauritania and Chad (Map 1.2). It highlights the most central institutional actors, how they co-ordinate their policies and the key

Map 1.2
West Africa



structural barriers to implementing public policies dedicated to women's economic activities. An analysis of this public policy network facilitates a better understanding of the complexity of the institutional landscape connected to the economic promotion of women and promotes actor awareness of their role within the network.

WOMEN IN TRADE NETWORKS

The social network analysis identified 1997 actors in the rice value chain between Benin, Niger and Nigeria using a "snowball" methodology. This approach maps the limits of a network beginning with a small group of merchants who were asked to identify other people with whom they are in contact, until the point of network saturation (see Chapter 4). This research confirms the structural marginalisation of women relative to men. From this perspective, gender is an excellent predictor of social interactions: while men have dense networks of male commercial partners, women are not very well-connected along the value chain to other women: only 22% of the women mention another woman as commercial partner. This suggests that when women trade, they do so preferentially with men.

Although women are active participants in the production and in the retail sale of local rice in the Niger River valley, their structural importance – centrality in the language of networks (Chapter 3) – is still lower than that of men. These gender inequalities are not only related to the number of commercial partners that each individual has: the women interviewed were generally less well-connected to central actors and were also less likely to play intermediary roles.

These findings demonstrate that gender is rigidly correlated with structural position

in trade networks. Women producers and retailers occupy the ends of the value chain while the vital intermediary positions are held by men. In a value chain like rice where the most substantive profits are related to storage and wholesaling rather than processing, the peripheral position of women is synonymous with lower profits. Access to credit is one of the most important factors that prevents women from developing their businesses: only actors with significant capital can accumulate enough rice to take advantage of opportune moments to reap substantial profits.

Beyond these structural constraints, research on the actors in rice value chains shows that the state of the road network, the lack of storage infrastructure and border corruption also constrain economic activities. This region is widely renowned for its agricultural knowledge, abundance of water and soil quality, however, its commercial infrastructure is not responsive to its producers or merchants. Women are particularly penalised in their work by these factors to the extent that their activities frequently take place in precarious conditions, without stores or specialised storage space and without personal vehicles that would permit them to quickly get to market. Finally, the illegal payments demanded by border authorities slows traffic and makes travel more expensive. These practices, called "administrative hassles" were widely criticised by those surveyed. Women traveling to markets are particularly victimised because they frequently travel by foot and with small amounts of agricultural products.

From a spatial perspective, this research confirms that rapid urbanisation and associated shifts in dietary consumption trends have led to an increasing demand for agricultural products from the region. This demand for local agricultural products has led to the development of remarkably integrated value chains between the countries of West Africa. In the rice network, for instance, the majority of the product of the Niger River valley reaches Nigerian markets through small urban centres in the Dendi region despite Nigerian rice import restrictions. This market supports thousands of small producers, rural and urban intermediaries, processers and retailers, many of whom are women. Nigerian merchants are major players in the rice value chain: they have the financial means to buy foreign rice and the vehicles to transport it to Nigeria. As such, the small cities in the Dendi, like Malanville and Gaya, function as relay points for the regional distribution of rice. Their production is temporarily centralised before being transported illegally onward to the Nigerian city of Kamba, from whence it continues to markets in Sokoto.

This research additionally confirms that the rice value chain is segmented by country. Only a small number of privileged intermediaries are capable of establishing cross-border commercial relationships. Close to three-quarters of the relationships between merchants are internal in Niger, in Nigeria and in Benin. These findings are a bit surprising given the notorious porosity of West African borders. However, they correlate with older studies that tracked large traders in the Dendi that showed that commercial intermediaries require well-developed professional skills and extended social networks, two characteristics that are rare in local commercial actors (Walther, 2015). The structural importance of these brokers is more important in a region like the Dendi, where most commercial activity is concentrated in the hands of an exogenous trader diaspora, than in regions that have well-established trade networks such the Hausa region where there have historically been strong cross-border networks.

WOMEN AND GOVERNANCE NETWORKS

An analysis of policy efforts directed at promoting women's economic activities shows that the governance network is constructed around a centre-periphery model where a small number of influential organisations are surrounded by organisations that are less well linked. This type of network is structurally similar to the network of cross-border co-operation in West Africa (OECD/SWAC, 2017). Central actors – such as international organisations and some West African and European states – interact preferentially

with one another while peripheral actors are connected primarily to the core group rather than to each other.

More than a hundred organisations with varying degrees of institutional competencies and variable objectives worked in this area in 2018, a remarkable number given that economic development is a sub-area of gender programmes in the region. Nearly one-third of the organisations are governments, primarily from West Africa, Europe and North America. These organisations have established 173 formal partnerships with one another in West Africa. Multi- and supranational organisations are the best connected in this governance network where there are few intermediaries.

The study of the interpersonal relationships that connect the representatives of these organisations shows even more significant contrasts. Despite the co-ordination efforts of states and their partners, the network dedicated to the promotion of women's economic activities is less dense and more fragmented than the cross-border co-operation network in the region. This lack of cohesion is notably due to the fact that although these organisations recognise the promotion of women as a fundamental element of economic development efforts more generally it is difficult to identify individuals within these organisations specifically in charge of this agenda.

The network is made up of more than 180 policymakers and specialists in the area of gender located primarily in West Africa and Western Europe and exhibits a structure in which actors are divided into small communities where it is generally difficult to communicate from one to the other in a small number of connections. These properties are typical of a random network and are not conducive to promoting women's entrepreneurship in the region.

WHICH DEVELOPMENT POLICIES?

The productive and commercial activities of West African women are constrained by numerous functional and institutional obstacles. The study of the food system presented in this report suggests that the economic marginalisation of West African women can be explained by their structural role in the system. The example of the rice value chain shows that women do not have access to the most profitable positions in the network, because of an unequal access to education, training, to means of production, transport and capital. In border regions, the existence of illegal taxes to cross the borders adds yet another burden. Several institutional obstacles also tend to reinforce gender inequalities in the region. Despite the efforts of states in the area of gender equality, factors such as customary and religious norms that define the form of conjugal unions, the ideal size of families, marital responsibilities, or the distribution of inheritance impede gender parity.

Network strategies

Development policies must take into account these limiting factors if they wish to promote the productive and commercial activity of women in the region. One way to do this is to encourage strategies that strengthen the way women are connected to other economic and political actors through social networks. Several strategies allow policymakers to identify the most central actors, to promote the diffusion of norms and practices, to accelerate social change and to increase the efficiency of organisations.

- Policies seeking social change with respect to gender parity can focus on identifying the actors most likely to promote new practices within their networks. Women are a group through which social change can be disseminated. Disparities in income, training and professional experience between genders in the agricultural sector suggests that they are an ideal target group for policies aimed at increasing social capital.
- Interventions can equally be targeted at interpersonal relationships that exist within communities of friends, parents or peers. Already established channels of communication between individuals can be used to encourage certain social changes, such as later marriage, more space between

pregnancies and contraception. Development policies can focus on this principle in order to disseminate best practices within the professional networks of producers and traders in the region.

- Public policies can also intervene in the structure of social networks themselves, in order to alter the number of actors and the intensity of their relationships if the network is too sparse or divided into several distinct groups. In modifying the architecture of social relationships, these strategies can affect the acquisition of individual social capital.

Reinforcing the social capital of women in the food system

Public policies aimed at intervening in social networks can reinforce the social capital of women by influencing the number of actors. The addition of actors seems particularly well-adapted to the case of agricultural value chains within which women are under-represented. The encouragement of business relationships is also effective in sparser networks or those that are strongly gender-biased, such as that of the rice value chain where links between women only represent 20% of the total and where numerous steps are required to connect one actor to another. In a network dominated by men, the promotion of women intermediaries is particularly advisable. Often inaccessible to many women due to their limited access to financial services, this position increases the value added of the product and the strategic position of women.

More generally, in an environment characterised by uncertainty, such as West Africa, the success of commercial enterprises depends as much on the capacity of actors to build business relationships with those that are close to them as establishing bridges with other more distant communities. Social capital resulting from the combination of close and more distant relations permits actors to compensate for the weaknesses of formal institutions that are supposed to regulate economic activities. It is particularly important in cross-border exchanges, which are characterised by a high level of uncertainty about prices, the reliability of trading partners and on states' positions on imports and exports.

This report shows that women have fewer business relationships, are less well-connected to central actors and are less likely to act as intermediaries than men. To address these inequalities, public policies must first manage to increase the number of business connections within the communities in which women live. These relationships, which are strongly rooted in the local culture, are vectors of solidarity and protection against the multitude of uncertainties that characterise trade in the region.

Policies must also promote the development of business relationships that enable women to access resources that would not otherwise be locally available, such as with new commercial partners, non-governmental organisations, or financial institutions. This objective is inseparable from development policies aimed at increasing circulation in the region by reducing non-tariff barriers, one-stop border posts that simplify customs processes and through the construction of rural and interurban roads between zones of production and consumption.

Support the co-ordination of the governance network

The network of governance organisations charged with the promotion of the economic activities of women in West Africa is fragmented into several groups. This situation occurs because of the limited number of experts on these questions and the low density of relationships between organisations. The promotion of women's productive and commercial activities in the region requires a more sustained effort to integrate the diverse national, non-governmental and international initiatives. This programmatic consolidation would also benefit from a reinforcement of formal and informal exchanges between the experts in each organisation, which have evolved in a relatively separated way to date.

A strategy to expand the number of informal links in the realm of governance would improve co-ordination within and between organisations involved in the promotion of women's entrepreneurship in West Africa. A "small-world" structure that maximises both

internal links and connections to different external communities of specialists in the area of women's entrepreneurship could be adopted. This would allow communities that share similar interests to communicate more easily through links that transcend sectoral and geographical boundaries. This type of network is more efficient than the random structure currently in place in the region and better adapted to the task of regional governance than a centralised structure within which co-ordination of information exchange is exercised by a single organisation.

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Chapter 2

Women's participation in markets in West Africa

Social and cultural beliefs, norms and practices 32
Gender inequalities in the food system 33
Gender inequalities in the institutional system 37

Chapter 2 examines how gender determines livelihood prospects and generates inequalities that limit West African women's access to and participation in markets. The chapter starts by discussing how gender inequality is reproduced at three different levels: the individual, the household and the community. A review of the literature shows that socially-defined gender norms and expectations that proscribe women's behaviour and choices have a deep impact on the food system that connects production, processing and distribution, to food consumption and nutrition in West Africa. The chapter also shows that gender inequalities arise from various institutions that animate and regulate markets in the region. Such institutions may take the form of formal or customary laws that apply to men and women, of finance, credit and savings regulations, and of policies that relate to market and business activities.

Key messages

- Trade constitutes a major source of income for women. However, they are more widely engaged in local than regional trade and in commodities with low value added and financial returns.
- Women remain disadvantaged despite increased economic opportunities brought by urbanisation. Their access to decent work remains heavily constrained by low human capital accumulation, household responsibilities and discriminatory social norms, laws and institutions.
- Formal institutions could do more to promote women's rights and enforce legislation on gender equality but significant gender gaps remain and women are under-represented within these institutions.

SOCIAL AND CULTURAL BELIEFS, NORMS AND PRACTICES

Enhancing the position of women in market systems is central to sustained development and household poverty reduction in West Africa.[1] This is because women's roles extend far beyond the sphere of family life: they are key economic actors in agriculture and the transformation of farm products, in local commerce and long-distance trade, and as well in the livestock sector. Women's fundamental role in family life and the functioning of rural and commercial economies means their prospects for achieving higher incomes and more diverse livelihood opportunities are critical to building resilient economies across West Africa (CARE, 2015; 2016).

Gender profoundly determines livelihood prospects and generates many inequalities that limit women's access to and participation in market systems. At the individual, household and community levels, women traditionally encounter beliefs, expectations and judgements that can limit their choices and opportunities. In the context of women's participation and empowerment in markets, social norms refer to "the interaction between individual behaviours and collective behavioural rules that shape how people behave and how people expect people to behave in order to either maintain or change how women engage with markets" (Markel et al., 2016: 12). These norms generate differences in

the roles of men and women and the expectations for what either does or should do.

In sub-Saharan Africa, women and men tend to operate or be productive in different economic spheres due to the gendered norms that define what is an acceptable set of roles and behaviours (USAID, 2011; Mudege et al., 2016). Social norms are spread, reinforced and endorsed in religious practices, traditions, family settings, workplaces and the media. Communicated through informal channels such as stories, rituals and ceremonies, role-modelling, or non-verbal transmissions, these norms are learned from childhood and then reproduced in adulthood through self-regulation and recognition of the judgements of others.

Women's participation in markets is significantly impeded by gendered division of intra-household expenditure responsibilities. In many households, it is not uncommon for women to receive a daily allowance from their husband to purchase cereals and condiments for the entire family. Gender norms surrounding how much influence women can exercise over decisions about expenditure, savings and investment, can also affect a household's budget (Doss, 2013).

Social norms that define the type of household work men can engage in and those that are unacceptable, such as cooking and cleaning, impact greatly on the time that women can spend on other activities. Unpaid household care work places a persistent and most often inflexible time burden on women. These household expectations tend to be supported by perceptions that care roles and responsibilities by natural order belong to women.

At the community level, social norms that govern women's responsibilities tend to be deeply entrenched. These "sticky" norms are critical to identify because they often represent some of the most inflexible constraints that shape what and how women engage in economic activity (Bicchierri et al., 2014). Social norms that define gender responsibilities define what is acceptable for a woman to do but also when, where and for how long. The risk of social sanctions from the community such as gossip, public shaming, exclusion, community pressure, intimidation or even violence for deviating from a gendered norm, may contribute to women's decisions to not participate in certain market practices even though it may make economic sense. Negative social norms and the social sanctioning of non-compliance are key factors in maintaining unequal access to power, resources, opportunities and results for women. For example, norms that limit women's right to land ownership tend to consequently suppress women's access to finance and other beneficial resources as well as improved livelihoods (Toulmin, 2009).

GENDER INEQUALITIES IN THE FOOD SYSTEM

Socially-defined gender norms and expectations that proscribe women's behaviour and choices have a deep impact on the food system that connects production, processing and distribution, to food consumption and nutrition in West Africa (World Bank, 2012; WFP, 2016-17d; Oxfam, 2011; USAID, 2014) (see Chapter 1).

Production and processing

African societies commonly display complex divisions of labour that greatly vary from one region to another and from matrilineal to patrilineal societies. Gender production roles also often experience changes that illustrate shifts in power relations between genders and social groups (Byfield, 2002). In Ghana, for example, Akan men and women were both involved in production and trade before colonisation. As colonial authorities introduced new crops and technologies, men increasingly worked in large cocoa plantations as wage labourers while women, who lacked access to land and formal educational qualifications, embraced informal trade (Clark, 2010).

Across West Africa, male and female labour contribution to food production tends to be demonstrably gender-specific (World Bank et al., 2008). Women are heavily involved in the horticulture sector and in the production of cereals, roots and tubers, such as millet, sorghum, cowpeas, maize, groundnuts, cassava,

rice and yam (Gnisci, 2016). Women and men also tend to have distinctive cropping patterns and often own different types of livestock. Additionally, women and men are frequently cultivating the same crops, but on different fields, or different varieties of the same crops depending on whether it is ultimately destined to be consumed by the household or to be sold on the market. Therefore, the description of cash crops such as cocoa, coffee, wood, pineapple and kola nuts as "male" crops, while subsistence crops are perceived as "feminine", is an oversimplification (Doss, 2002).

One of the distinctive features of West African households is that men and women generally retain ownership or have specific rights on the pieces of land they cultivate and on the livestock they breed. As a result, households tend to have distinct sources of earnings. The occasional sharing of incomes with other members of the household is regulated by social norms, events, and the bargaining power of each household member (Doss, 2013). The revenues generated by different crops can be used to buy different goods and respond to various external shocks, such as droughts or economic recessions. In Côte d'Ivoire, for example, income from yam, the major food crop cultivated by men, translates into education, staples and overall food consumption, while income from cash crops cultivated by both men and women is associated with expenditures in alcohol, tobacco and prestige goods. Income from crops predominantly cultivated by women, such as coconut, plantain, oil palm, taro, sweet potato, vegetables, banana, and fruit trees, are used to purchase food (Duflo and Udry, 2004).

Across West Africa, differences in labour market and credit access explain the gap generally observed between the agricultural productivity of men and women (Peterman et al., 2011; Palacios-López and López, 2015). Married women also tend to spend long hours doing domestic work and find themselves in the informal sector or working part-time just to balance their work outside the home with household care responsibilities. In their role in farming activities, women are more likely than men to have smaller, garden-sized plots or grow less profitable crops. Women's inability to access and make use of agricultural resources according to their own needs constitutes a source of risk, which adds to the already uncertain business environment of West Africa.

Women's farm labour is also more likely to be underestimated because jobs such as weeding are viewed as "family labour" or domestic responsibilities" and not necessarily productive activities (Twyman et al., 2015). The latter conditions are reinforced by gendered norms such as the segregation of sectors and tasks based on those perceived to be appropriate types of work for women and men due to cultural factors, biological attributes, safety concerns and household care responsibilities assigned to women. This type of gender segregation has implications for sectors such as cattle-rearing because of the responsibilities of daily care of cows, the necessity for land larger than the homestead and the common practice of transhumance which increases the number of interactions with strangers.

Women are particularly numerous in post-harvest activities, whether it is in relation to processing or distributing foodstuffs. They process cereals, nuts, roots, tubers, fruits and vegetables, and handle poultry, small livestock, and fish (Gnisci, 2016). A significant part of this work is conducted within the family compound rather than in organised workshops or factories, which tend to make women's transformation activities less visible than that of men.

Market distribution and infrastructure

Studies conducted across the continent consistently show that trade represents a major source of income for African women (UNIFEM, 2009; FAO, 2017). Women and men often sell different types, volumes and qualities of products than men, sometimes to different customers and at different times (Harriss-White, 2000). On the Gaya market in Niger, for example, only maize is sold by both sexes. Fruits, vegetables, fish, condiments, retail grains, maize flour *(garri)* and yams are exclusively sold by women, while men sell meat, wholesale cereals, plastics, general food, new and used textiles, hardware, cosmetics and shoes (Walther, 2008).

Generally, women tend to be over-represented in the sale of fish, agricultural and food

products destined for the local market. Many of the commodities sold by women, such as staple food and cooked food, can be prepared domestically and/or are perishable. They have a low value added, generate lower financial return and require little capital and credit because more women start out in business at the micro- or small-scale level. This is due to numerous reasons that may include availability of time, household responsibilities, business experience and assumptions about women's ambitions and abilities (WFP, 2016-17d). Men tend to trade in products and sectors that require larger investments and a more international market, such as cereals, hardware, foreign currencies, electronics, and other agricultural and manufactured goods.

In West Africa, marked differences can be observed as to women traders' autonomy to conduct their own business. Along the Gulf of Guinea, married women generally have the right to earn and control an income independently from their husband and to trade in public places (Clark, 2010). The situation is more heterogeneous in the Sahel, where women have been described as either highly independent or confined to their domestic courtyards, especially among Hausa Muslim communities (Rahman, 2008). For example, in some villages in the Kano region, women are not permitted by their husbands to leave the family home, even to sell produce in the local village market (Hoffmann et al., 2017). Therefore, women's chance to engage in commerce in these households is restricted to what they can sell from their home to neighbours who are likely to be growing much the same crops.

Gender-specific roles are learned at a very early age in West Africa. Unaccompanied young boys and girls walk around the market, selling pieces of sugar cane, oranges and doughnuts prepared at home or in the shops of their parents, each according to dominant gender expectations. Spatially, men and women traders also occupy different parts of the market because of gendered notions of propriety in public spaces. Many small-scale women traders lack a proper shop and conduct their business sitting on stools in the sun, or hawking as street vendors, without access to electricity, water and sanitation. These women are particularly vulnerable to city or state initiatives that aim at clearing markets from street vendors.

Women's access to markets is also heavily constrained by the lack of proper and individual means of transportation and storage. Because of male-gendered transport ownership, many women have no other choice on market days but to walk long distances to sell their products, leaving their villages before the sun rises. Consequently, women devote a larger share of their income to transportation than men. They also face frequent delays while using public transportation or crossing borders that can affect the quality of their goods. On the busy Lagos-Abidjan transport corridor, for example, women traders are subject to numerous checkpoints that reduce their daily profits (LARES, 2017). This situation is aggravated by the fact that many women are illiterate and not informed of formal regulations that pertain to cross-border trade (USAID, 2012).

The fact that the mobility of women is more constrained than that of their male counterparts does not necessarily mean that all women are confined to small-scale retailing. West African women have a long history of long-distance trade and have been historically more involved in trade than women in other parts of Africa (Coquery-Vidrovitch, 1994). Their contribution to the trade economy is particularly important in urbanised regions where trade has pre-colonial roots, as in the Yoruba, Dahomey, and Ashanti Kingdoms, as well as in Sierra Leone and Senegal. During the colonial period, many women traders benefited from the rapid growth of capital cities and from the existence of a new urban workforce to trade fish and agricultural products, such as palm oil, cotton, kola nuts, and shea butter (Chuku, 2005). Other women specialised in the trade of pottery, basketry, and beer and other products that had not been monopolised by the Lebanese-Syrian trade diaspora, such as textiles, a sector that has remained dominated by women until today.

West African women were quick to adapt to the new "spatial order" brought by colonisation (Howard and Shain, 2005) which, with the introduction of steamships, railways, trucks and the telegraph, contributed to reorganising trade patterns along the Gulf of Guinea. Many Krio women from Sierra Leone took advantage

of the new means of communication to export kola to previously untapped markets in Nigeria, Gambia and Senegal (Howard, 2014). In Abeokuta, Yoruba women used the new infrastructure, credit, technologies and availability of European cloth during the early decades of the 20th century to invest in the local dyeing industry (Byfield, 2002). Many Mina, Ewé, Akan, Yoruba and Fon women living in societies where agricultural work was primarily conducted by men left their region of origin to establish new businesses in cities where local women were little involved in trade, such as Abidjan (Coquery-Vidrovitch, 1994). In Accra, the importation of European goods during the colonial period also brought major changes to women's economic activities.

As many women left farming and embraced trade, they became less dependent on the social hierarchies that regulated the kin mode of production but more increasingly constrained by sexually segregated structures on which they had little control (Robertson, 1984). The scale of their business and their power to recruit labour was considerably diminished by the introduction of new capital-intensive modes of production and marketing, resulting in a decline of their economic options.

More recently, some West African women traders have taken advantage of the liberalisation of trade, a growing urban demand for processed food and the withdrawal of European commercial houses to establish long-distance trade networks within the region and beyond. The most documented example is the one of the Togolese Nana-Benzes, who have built considerable fortunes by relying on exclusive resale rights negotiated with European commercial houses. Their monopolistic situation on the textile market gradually eroded during the 1980s, owing to the liberalisation of the Togolese economy and the progressive democratisation of the country, which called into question the close links that the Nana-Benzes had built with President Gnassingbé Eyadéma. Today, the West African market is flooded with cheap imitations of European-produced wax prints from China and the Nana-Benzes have been supplanted by new generations of businesswomen who deal directly with Chinese manufacturers (Sylvanus, 2013). A similar evolution is observed in Mauritania and Senegal, where women entrepreneurs have contributed to open new trade routes to Paris, the Arabian Peninsula, China, Brazil and the rest of the world (Lesourd, 2013; Diallo, 2014).

Consumption and nutrition

In recent decades, food consumption and nutrition patterns have experienced major changes due to urbanisation and the growing importance of non-agricultural activities in rural areas (Allen et al., 2018). Combined with strong population growth, changing consumer preferences and rising incomes, urbanisation has profoundly transformed the West African food economy (Allen and Heinrigs, 2016). Households consume a greater variety of products than before. They eat more street food and are more attentive to quality, freshness, health risks and the nutritional properties of the products they eat, leading manufacturers to pay more careful attention to packaging and advertising. These changes do not only concern imported products such as rice or chicken, but more and more locally-produced maize, rice, roots and tubers, such as cassava, yams and sweet potatoes. The demand for processed food that is easy to prepare and quick to consume is far from being limited to a few capital cities. It has spread across the region, from the Gulf of Guinea to the Sahel, and from wealthy households to most income groups (Staatz and Hollinger, 2016).

For African women, the pace of urbanisation has meant more opportunities but also continued limitations (Sheldon, 2018; Boserup et al., 2013). On the one hand, cities have allowed women to develop less traditional family configurations, establish new forms of businesses and be more involved in social, religious and political movements. By moving to cities, many women can engage in professional activities in ways that would have been unimaginable in rural areas. Better access to health care, family planning and education in cities has also expanded some women's family choices. Yet, women's work opportunities are still heavily constrained by their marital situation, their lower level of education and religious norms that limit equal opportunity with men.

As a result, women are generally under-represented in the formal sector of the economy and confined to risky and low-paid occupations such as street vendors.

In rural areas, the spread of non-agricultural activities has major implications for women as well. As value chains develop and new agribusiness emerges, more and more people work in the processing, distribution and marketing of food products. Food is also increasingly purchased through markets rather than produced by the households, even in rural areas, leading West Africa to steadily shift "from a subsistence-based economy to a market economy" (Allen and Heinrigs, 2016: 8). These changes could potentially have an impact on women's economic activities by focusing on high-value and high-potential food crops (Gnisci, 2016).

GENDER INEQUALITIES IN THE INSTITUTIONAL SYSTEM

Gender inequalities are also shaped or reinforced by the various institutions that animate and regulate markets in West Africa (Bouchama et al., 2018). Such institutions may take the form of formal or customary laws that apply to men and women, of finance, credit and savings regulations, and of policies that relate to market and business activities.

Legal systems and supporting institutions

The laws and institutions that influence the role that women can play in agriculture and the rural economy in West Africa greatly varies across the region. Women's rights are subject to various legal institutions that compete against each other and, generally speaking, do not adequately protect them against sexual and gender-based violence, nor do they guarantee their economic, social and cultural rights (AU and UN, 2017). Consequently, much of the literature on issues relating to legal systems highlights the gap between rights that exist in formal terms, and the practical reality of whether they are respected in the real lives of women (for a review, see Cook, 2012). In the Sahel, for example, the laws that provide a framework for women to acquire land are derived from customary law, Islamic *(sharia)* law, and the modern legislation introduced since the beginning of the 20th century. Under Islamic law, women can inherit, albeit only half the share allocated to male siblings, while under the law of modern secular states, they inherit a share equal to male family members. In theory, women can use the courts to secure their equal rights to land under modern law; but *sharia* is becoming more predominant in Sahelian countries.

Pressure from a woman's family often blocks the route to land inheritance for fear that a woman will marry and her land will then pass to the family of her husband (Bron-Saïdatou and Yankori, 2016). Women's ability to secure access to land in line with the rights they have on paper can be further hampered by the strength of community traditions. In many societies, this tendency can be further reinforced by the predisposition to regard land as something that has an almost sacred or mystical value, and in relation to which men enjoy an almost pre-ordained societal status – as seen in parts of Senegal, for example. In Niger and Senegal, women are pressured into handing over their land rights to a husband or other family member (Charlier et al., 2014). The difficulty that women face in securing ownership to property in line with their legal rights is compounded by the social and economic pressures pushing them towards the margins of land access at a time when population growth is intensifying the competition for land (Doka and Monimart, 2003).

Women make a vital contribution to the rural economy as farmers, labourers and traders but have less access than men to land and financial assets, agricultural inputs and services as well as agriculture-related employment opportunities. Studies conducted across Africa confirm that the percentage of women who are landowners is lower than comparable figures for men, albeit the gender gap varies greatly (Doss et al., 2015). In Niger, 9% of the land surveyed in the 2011 *Living Standards Measurement Study* was owned by women

exclusively, 62% by men and 29% by both sexes. In Nigeria, women had the right to sell and use as a collateral 4% of the land, while men owned 87% of it, according to a similar survey conducted in 2010 (Doss et al., 2015). In both countries, the average value of the land owned by men was generally higher than the one owned by women. Similar gender disparities can be observed in agricultural inputs and credit (Box 2.1). According to the Food and Agriculture Organization of the United Nations (FAO, 2008), Nigerian women farmers have just 27% of access to chemical inputs, 21% of credits and 26% of storage facilities as compared to their male counterparts.

The enforcement of land rights also poses a real challenge for women living in rural communities, often distant from large towns where courts sit and perhaps intimidated by the administrative requirements and formalities that surround court proceedings. To meet the need for a local level, easily accessible structure to rule on land disputes and related matters, countries such as Niger have developed a system of land commissions operating at regional, district and sometimes even village level (Benjaminsen et al., 2011). Of course, other forms of land tenure are also available: women may be able to rent land, or they may be granted usage rights. However, this is still only a transfer of usage rights and not a transfer of ownership. Moreover, without permanent ownership women farmers may refrain from making expensive investments that would improve the land, guard against environmental degradation or boost production capacity, such as sinking a well, or that would only deliver benefits over the longer term, such as planting trees for fruit or firewood.

Important gender disparities also remain in the representation of women in formal institutions that could potentially promote women's rights or enforce formal law, such as land commissions, courts, ministries and parliaments. Women in Africa held, on average, 24% of seats in national parliaments in 2017, a

Box 2.1
Land insecurity for Nigerian women

Land insecurity is a common experience for Nigerian women. Nigeria's property and land tenure laws do not directly discriminate against women, yet they are less likely to have opportunities to own land through direct purchase. Nigerian women commonly obtain land rights through marriage and inheritance but these conditions of access are unreliable and prone to reversal either by divorce, separation, widowhood or cultural beliefs associated with women's altered relationship status to men. Above all, the land rights that women acquire through men in their capacity as wives or daughters, do not often extend to outright ownership. Only a handful of Nigeria's 36 federal states have enshrined equal inheritance rights into law allowing customary laws that stipulate that only men have the right to own land to remain unchallenged legally.

In formal legal terms, Nigeria's 1978 Land Use Act nationalised all land and vested authority over it to the federal government. Despite this theoretical cover, access to land is still governed by a range of *sharia* and local governance practices and in many communities, women's right to land is regarded as secondary to that of men when decisions are taken at the local level. The prevalence of *sharia* in northern states does offer women a route to outright land ownership through divorce, but levels of female ownership are still much lower than male land ownership – and the gap is particularly wide in the northern states (British Council, 2012). In northern Nigeria's Katsina State, for example, women may more easily secure legal access to land, by inheritance or even gifts, yet social, cultural or religious factors may inhibit the ability to cultivate the land themselves (Sada and Mohamed, 2013).

Source: Hoffmann et al. 2017

percentage similar to the world average (World Bank, 2017) and three times higher than in the 1990s (Hughes and Tripp, 2015). Yet, in some West African countries, women seem particularly under-represented in formal institutions. Nigeria, for example, has the lowest proportion of women parliamentarians in sub-Saharan Africa (6%) and ranks 183rd for women's political representation in the world out of 190 in 2018 (IPU, 2018). In 2015, a bill calling for the elimination of discrimination against women in marriage and the protection of widows and children with regards to inheriting a deceased husband's property and assuming legal custody of their children, was rejected by Nigeria's lawmakers.

Finance, credit and savings regulations

Access to formal financial services is an essential factor for the development of women's economic activities in sub-Saharan Africa (Fletschner and Kenney, 2014). In particular, credit allows women to acquire productive assets, invest in land and storage areas, purchase individual transportation, open new businesses and develop professional skills that make them more productive and less dependent on men. In many parts of sub-Saharan Africa, however, women producers and traders have particular difficulty in securing access to finance. Generally, it is men who own family homes, which they can use as security to get credit; most women do not have such a major asset they can pledge to raise funds. While advances have been made in helping women gain access to financial services, gender disparities remain. Globally, women are less likely to possess a bank account and to save formally than men (World Bank, 2018). In East and Southern Africa, where cross-country studies of gender differences have been conducted, women are less likely to use formal financial services than men because of lower education and income (Aterido et al., 2011).

In West Africa, where mutual savings circles *(tontines)* are widespread, lack of access to larger credit offers limits the scale of investment that can be made by women entrepreneurs or groups of women. In northern Nigeria, for example, traders express dissatisfaction with their finance options and the politicisation of government loans (Hoffmann et al., 2017). Traders surveyed in the Kano region claim that they encounter barriers to accessing credit because of high interest rates from traditional banks. Islamic banks which operate interest-free loan policies are similarly unappealing because many traders find their processes cumbersome and discouraging. Traders also complain that the terms and conditions of most loans prevent them from taking advantage of market opportunities by restricting them to just the goods stated in the loan application.

The gender gap in access to credit has led many international and non-governmental organisations (NGOs) to support financial services such as micro-credit, micro-savings, micro-insurance, and money transfers, known collectively as microfinance (van Rooyen et al., 2012). These services are designed to help women micro-entrepreneurs or women's associations to increase their profits and help them develop economic activities that require greater capital or that are traditionally devoted to men. Direct access to financial services enhances rural women's productive capacity, contributes to a fairer allocation of resources in their households and leads to improved health, nutrition and education (Fletschner and Kenney, 2014). While there is no doubt that access to credit and savings is beneficial to economic activity in general, the impact of micro-finance on poverty reduction and social inequality is still the subject of vigorous debate in the literature. A systematic review in sub-Saharan Africa shows, for example, that while micro-credit and micro-savings "have positive impacts on the levels of poor people's savings […] they also both increase clients' expenditure and their accumulation of assets" (van Rooyen et al., 2012: 2258). These results suggest that micro-finance is no "silver bullet" for reducing poverty and is more suited to the needs of women entrepreneurs who already have some wealth rather than those of the poorest.

Women-focused economic policies

The Beijing Platform for Action set up at the United Nations (UN) Fourth World Conference on Women in 1995 set an ambitious agenda for women's empowerment at the global level.

The declaration noted that "throughout their entire life cycle, women's daily existence and long-term aspirations are restricted by discriminatory attitudes, unjust social and economic structures, and a lack of resources in most countries that prevent their full and equal participation" (UN, 1995: 38). In the following decades, however, progress towards gender equality has been slow in the economic sphere (GADN, 2016). This is especially the case in sub-Saharan Africa, where women continue to experience major barriers. As noted in the latest Sustainable Development Goals Report of the United Nations (UN, 2018: 6), "gender inequality continues to hold women back and deprives them of basic rights and opportunities. Empowering women requires addressing structural issues such as unfair social norms and attitudes as well as developing progressive legal frameworks that promote equality between women and men".

At the world level, gender is increasingly incorporated into trade policies through a combination of policy instruments such as trade liberalisation agreements, reduction of tariffs on sectors with high female employment, tax incentives that encourage exports from women-owned enterprises and multilateral development assistance frameworks (IANWGE, 2011). In the productive sector, as well, women's ability to access productive resources is now widely regarded as a core principle of the gender strategies formulated by international organisations and funding agencies (IFAD, 2012; BMGF, 2018). The World Food Programme (WFP, 2015: 4), for example, argues that "women must have not only equal capabilities and equal access to resources and opportunities to those of men, but also the ability to use these rights and opportunities to make choices and decisions as full and equal members of society". In order to design market-based interventions that empower women and vulnerable populations, an increasing number of detailed case studies now examine the gender dynamics of food markets and value chains in West Africa (WFP, 2016-17 a, b, c, e; 2016).

Many of the gender initiatives currently developed in sub-Saharan Africa highlight the benefits of targeting agricultural investments at women to redress gender imbalances and reduce poverty. Women-focused strategies in agriculture build on the assumption that increasing women's productivity is beneficial to the entire society, not just to women's empowerment. UN Women (2009: 1), for example, argues that "empowering women informal cross-border traders will have a multiplier effect on poverty reduction, employment creation, intra-African trade and regional integration". As women produce and earn more, their increasing well-being generates positive spillovers to the rest of society, in terms of nutrition, education and health. While this assumption is widely shared in the policy community, evidence for sub-Saharan Africa has been sparse, mainly because of methodological challenges inherent in collecting and analysing data on gender (Peterman et al., 2011). Separating women's production in households with joint production is notoriously difficult in Africa where most farms are operated by families that include both men and women (Doss, 2018).

Development programmes with a market-systems approach have begun to integrate the fact that the universe of decision-making is not always rational but is critically "influenced by contextual cues, local social networks and social norms and shared mental models" (World Bank, 2015: 3). Efforts to integrate women's empowerment into market-based development interventions are increasingly acknowledging the impact of social relations and issues on programmatic outcomes. Agricultural markets like any other sphere of human life and activity are, indeed, not just the product of market forces but are very much the function of networks, collective decision-making as well as social or cultural norms that shape behaviour and expectations (Baden, 2013).

Questions of agency – and particularly the social factors that influence an individual's preferences, choices or options and decision-making authority – are indeed critical to developing programmatic responses that address women's unequal access and participation in agricultural markets in West Africa. As the Bill and Melinda Gates Foundation (BMGF, 2018: 25) notes, "Women's agency is as essential as economic advancement. Decision-making over her and her household's income and assets enables durable gains for herself

and her children". In this context, agency can be best understood as the process of exercising one's power to make or take decisions that impact on one's life, family, household and wider community. Although the exercise of agency primarily stems from within an individual's culture, external factors such as social expectations, societal judgements/sanctions and institutions are the framework that either encourage or undercut the exercise of agency (Golla et al., 2011).

Despite the acknowledgment of the role of contextual prompts and shared mental models, the evidence for how to effectively identify, measure and test for gendered social norms that influence women's economic empowerment in market systems is still an emerging field of study and experimentation (Walther and Renk, 2017). This report contributes to this emerging research and policy field, by mapping precisely the structural role of West African women in trade networks and the policy network formed by government and non-governmental organisations involved in promoting women's economic activity in the region.

NOTE

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Chapter 3

Mapping trade and governance networks in West Africa

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Social network analysis 50

Chapter 3 discusses the methodological characteristics of social network analysis and its application to the study of the role of women in trade networks and the governance of women's economic activities in West Africa. It shows that the analysis of social networks differs from that of value chains, usually used to visualise the phases of the process at which actors are integrated from raw materials to final product. Rather, social network analysis maps the ensemble of actors involved in an agricultural sector or in a type of public policy and measures their structural importance with respect to their attributes, such as gender or nationality. In recent years, social network analysis has seen a resurgence of interest amongst international organisations, progressively becoming a tool for public policy and a lever for local autonomy.

Key messages

- Social Network Analysis (SNA) is an innovative approach to development that captures cross-border trading through the mapping of relationships between individuals and between organisations.
- In West Africa, economic performance depends as much on the general architecture of the trade network as on the structural position of each actor in the social structure.
- Trade networks allow large numbers of actors to co-ordinate activities that are functionally different from one end of the value chain to the other over considerable distances.
- Traders with numerous commercial partners are better positioned to respond to changes in demand than those on the peripheries of networks who are dependent on intermediaries.

SOCIAL NETWORK ANALYSIS AND WOMEN'S ENTREPRENEURSHIP

The methodological originality of this report is the adoption of social network analysis (SNA) as a principal tool to study the factors that limit the participation of women in commercial exchange in West Africa. This quantitative approach permits a visualisation of the way in which certain actors are connected to one another by business, parentage, friendship, or proximity ties, or by conflict. Mapping the ensemble of linkages between social actors allows for new perspectives in the analysis of constraints and opportunities facing West African women.

A relational analysis is applied systematically to trade networks in the rice sector between Benin, Niger and Nigeria and to public policies designed to promote the economic activities of women. The analysis of trade networks highlights the major obstacles faced by women in the food system (Chapter 4). A central hypothesis is that traders with numerous commercial partners are theoretically better positioned to respond to changes in demand than those on the peripheries of networks that are dependent on intermediaries to access the market. Additionally, the study of public policies focused on supporting women entrepreneurs provides a map of international governance networks (Chapter 5). Here the assumption is that the way in which information circulates in the governance network conditions the form and

effectiveness of public policies aimed at women in West Africa.

This study limits itself to the regional public policies that might legitimately influence the economic activities of women. In the food system, this involves systems of production, processing, distribution and sale. Regional policies can promote women's activities in these areas by, for example, developing infrastructure that facilitates border crossings, by improving transport corridors or by supporting training and educational opportunities for women. Activities related to consumption and nutrition are not addressed by this report because they are dependent on decisions taken in households upon which regional policies have little influence. The study is also limited to public policies that can remove institutional obstacles that hinder women's economic activity, such as access to credit, without looking at political factors or customs that stem from national or social norms (Figure 1.2).

VALUE CHAINS AND SECTORS AT THE REGIONAL LEVEL

The actors engaged in the conception, production, commercialisation, distribution and consumption of a product or service are often represented as links in a chain. This value chain also includes core activities such as logistics, operations, sales and the services that these activities support, such as infrastructure, human resources, technology and procurement. Popularised by Michael Porter's *Competitive Advantage* (1985), these value chains have become ever more complex instruments of analysis that permit an understanding of the interdependence between economic activities and the ways in which they are transforming global commerce. Value chains are also central to the policies of states, international and regional organisations that have examined the effects of global commerce on employment, well-being, innovation and the environment for decades (World Bank, 2018).

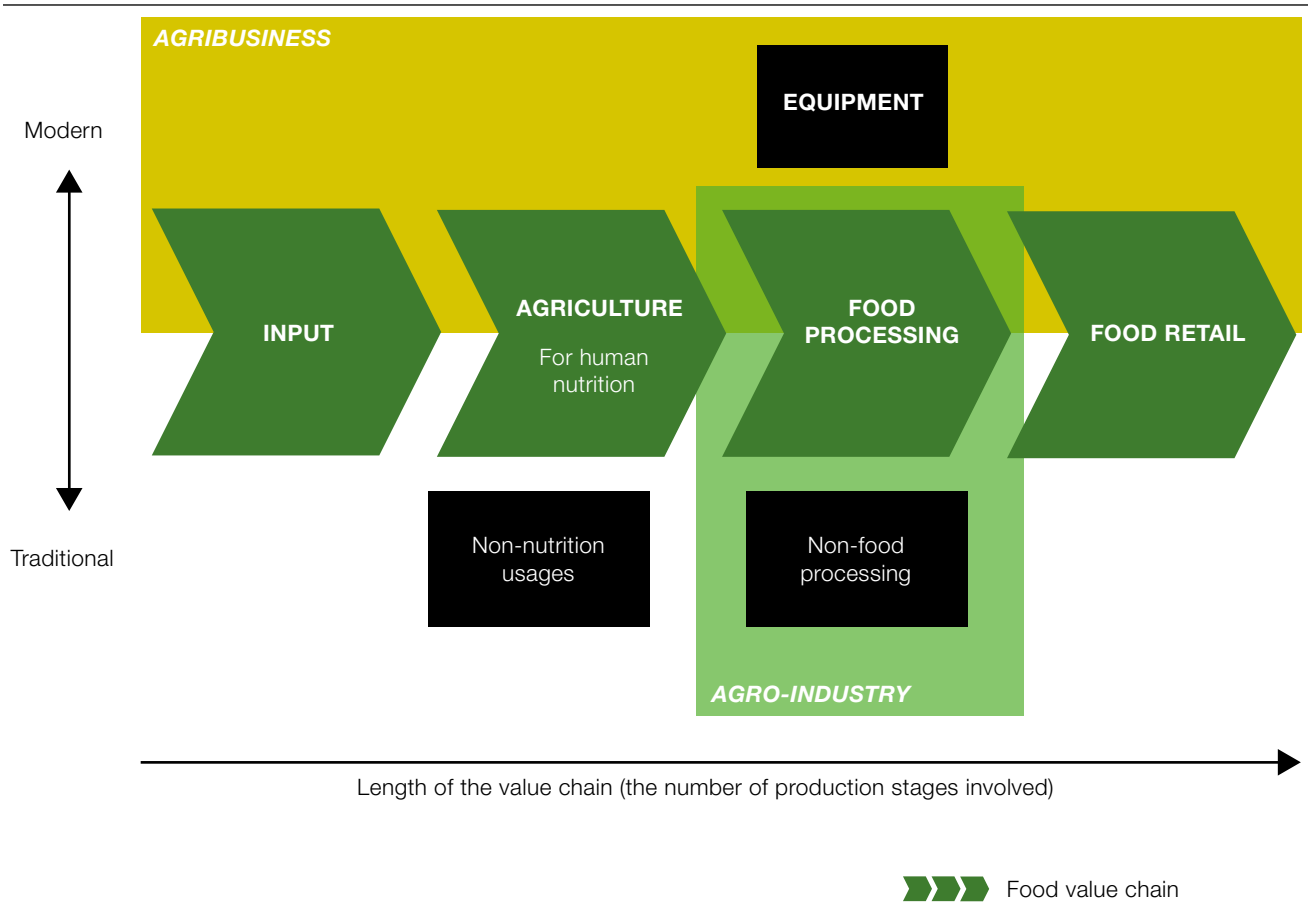
In the area of agriculture, a value chain is defined as the group of actors and activities that "bring a basic agricultural product from production in the field to final consumption, where at each stage value is added to the product". This chain of value can be "vertical linking or a network between various independent business organisations and can involve processing, packaging, storage, transport and distribution" (FAO, 2010: 2). Each of the segments of the value chain can yield a competitive advantage and can be optimised to increase enterprise margins by reducing the cost of raw materials, by reducing waste in production processes, or through innovations in delivery or after-market services.

The concept of a value chain is used to characterise the activities of a firm or of a group of firms incorporated into a sector that necessitates several transformative steps or specialisation. In the area of food, several specialised chains overlap to add value to agricultural products delivered to the consumer (Figure 3.1). The first chain involves the production of inputs designed to increase crop yields, such as fertilizer, agrochemicals and seeds. The products added to the earth or to crops sustain the second chain, which involves agricultural production proper, destined for human or animal consumption. The agribusiness, which constitutes the third chain, transforms agricultural products before their distribution to consumers (Allen and Heinrigs, 2016; Staatz and Hollinger, 2016).

Far from being limited to formal enterprises, the value chain concept also describes core activities and the support of informal businesses as well as their connections in time and space. In Africa, where the terms value chain and *filière* are often used interchangeably, agricultural and livestock organisations have long been studied by the scientific community (Corniaux et al., 2014; Biénabe et al., 2016) and are increasingly of interest to the private sector (Deutsche Bank, 2014) and the international community (IFAD, 2010; FAO, 2014; WAC, 2011).

In West Africa, agricultural value chains generally connect a large number of producers and retailers. This "traditional" structure requires numerous intermediaries to the extent that transactions are, on average, small in terms of volume and value. The majority of

Figure 3.1
Food value chains, agribusinesses and agro-industries



Source: Allen and Heinrigs 2016

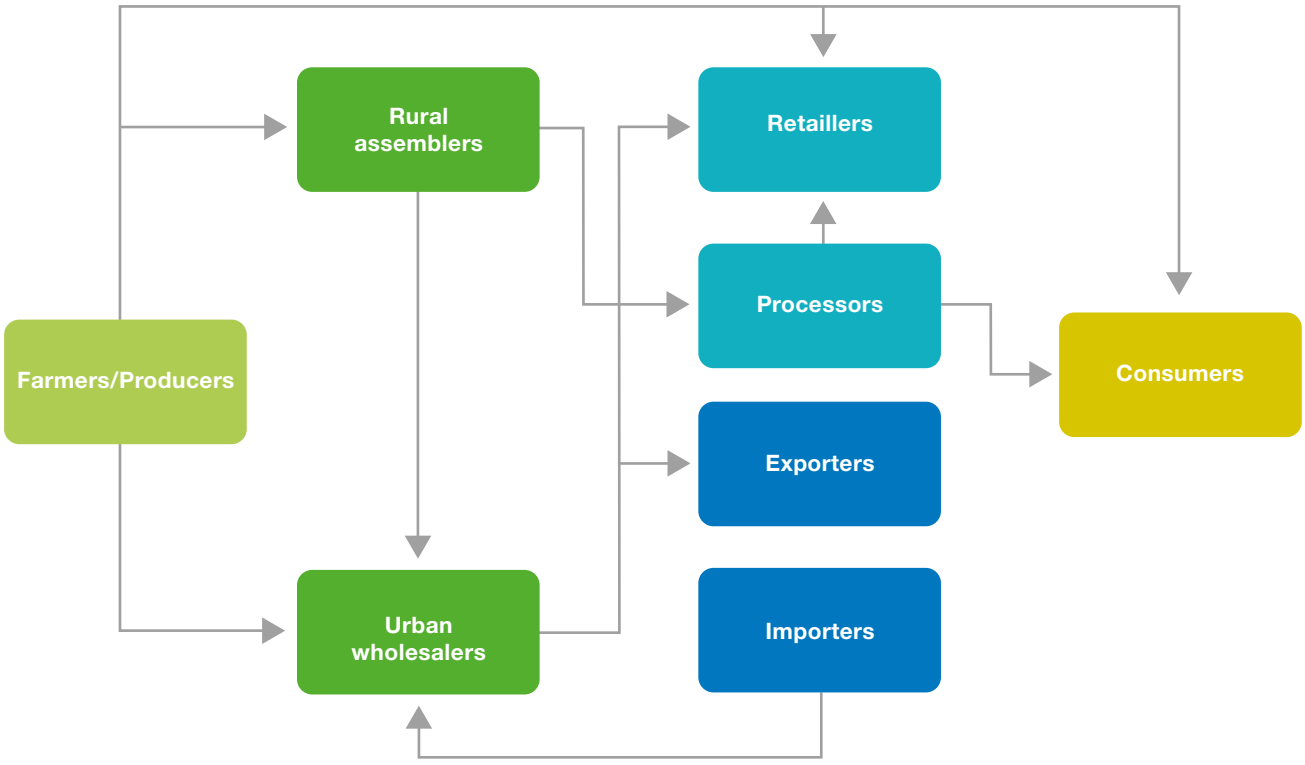
commercial exchange takes place in markets where the delivery and payment of agricultural products happen more or less simultaneously. This is due to the absence or weakness of formal institutions to co-ordinate commercial transactions and guarantee contracts between traders (Fafchamps, 2004).

This structure differs from value chains in which there is vertical co-ordination between co-operative or large producers, supermarkets or consumers, as in much of the Western world. In this kind of structure, transactions are executed through contracts and a standardised procurement system (McCullough el al., 2008). These reduce the number of intermediaries, increase the size of each transaction and bypass physical markets for specialised stock markets. By contrast, in West Africa, marketplaces retain their importance as a place where buyers and sellers meet and for actors involved in food value chains.

Flows in a value chain are generally represented as links of dependence between actors. In West and Central Africa, for example, the cowpea value chain connects producers to rural wholesalers who disseminate the product to processors and then to the final consumer (Figure 3.2). Collection and storage facilitates the distribution of the product for further processing or production, while the conversion of cowpea into couscous or beignets is a rapid way of creating consumable food for consumers.

In numerous West African countries, agricultural and livestock value chains cross borders. Agricultural and animal products are transported to markets in neighbouring countries by producers or wholesalers

Figure 3.2
Cowpea value chain in West and Central Africa



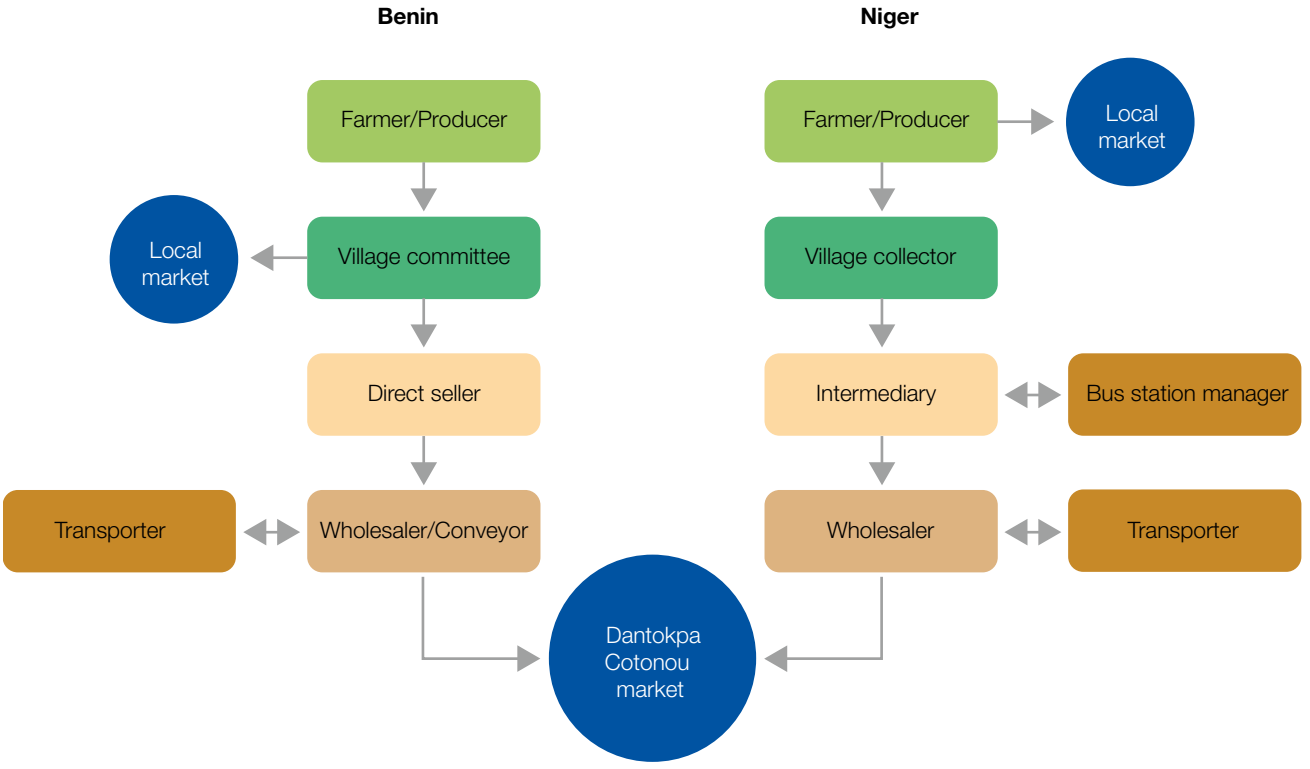
Source: Adapted from Mishili et al. 2009

that specialise in long-distance trade. The consumers that buy onions in the main market of Dantokpa, in Cotonou, for example, are supplied by a group of producers and service contractors located several hundred kilometres away in the Malanville-Karimama region in Benin and in the Madaoua-Birni N'Konni-Keita triangle in Niger (Figure 3.3). After being collected from small farmers, onions pass through the hands of various intermediaries that will channel them to wholesalers in charge of supplying retailers in Cotonou (Tarchiani et al., 2013).

Studying agricultural and livestock value chains facilitates the identification of actors involved in the sale of a product or a service and distinguishes their respective tasks. This approach also helps to understand the different steps that separate producer and consumer and to identify blockages that could impinge on economic activities. Ultimately, value chains highlight socio-economic inequalities stemming from product and service production, transportation and commercialisation processes. In certain chains, like that of onions from the Niger River valley, producers are unable to control processes of storage and the flow of their products, which gives wholesalers a comparative advantage to the extent that they can buy large quantities of products at a better price right after harvest (Walther, 2008).

If the value chain approach allows to effectively identify these roles and processes it is, however, a simplification of the reality of the flows of materials, services, capital and information that links economic agents. These agents are simply described as members of single categories – "producers" or "intermediaries" – which masks the fact that some will, in fact, play several roles. The emphasis on value added to a product or service also neglects the fact that many informal economic actors tend to diversify their economic activities to mitigate market uncertainties characteristic of many value chains. This diversification is particularly evident in West Africa, where producers

Figure 3.3
The value chain of onions sold at the Dantokpa market in Cotonou, Benin



Source: Adapted from Tarchiani et al. 2013

and traders tend to invest in several different agricultural and manufactured products simultaneously depending on their financial resources. The focus on the linear process of value creation characteristic of the value chains approach also makes it difficult to assess the complementarities between actors working in the same markets but with different products, as well as the process of West African business community development. These often depend on conjectural comparative advantages, such as import restrictions, rather than industrial evolution or innovations.

These limitations are not, in and of themselves, a critique of the value chain approach, which remains an important strategic tool for visualising the creatives steps of the value chain in which economic actors are integrated. Nevertheless, other approaches have been recently developed to take into account the diversity of social relationships that link economic actors and to measure the degree to which the structure of these relationships facilitates or limits economic activity. Social network analysis is among those approaches.

SOCIAL NETWORK ANALYSIS

The primary function of social network analysis is to reconstruct as exhaustively as possible the social, economic or political relationships between individuals or organisations (Borgatti et al., 2009). Frequently applied to Western societies, this type of analysis is being progressively applied to specific issues in African society. Since the end of the 2000s, social network analysis has been used by international organisations, which have progressively supported public policies (OECD/SWAC, 2017). It helps to operationalise development projects and identify potential

tensions and propose solutions that facilitate exchanges of information and co-operation (Bloom et al., 2008; Schiffer et al., 2010). Being able to visualise the actual relationships within a social group provides an empowerment tool for local communities and non-governmental organisations (Schiffer, 2012; IRC, 2016). Social network analysis permits the measurement of the social capital of the actors in a community in order to understand the structural causes of marginalisation of certain social segments, such as women, the young or the aged (Walther and Renk, 2017).

Two main approaches to social networks

Contemporary social network analysis is driven by two main research questions (Borgatti and Halgin, 2011). On the one hand, some researchers explore how social ties serve as channels through which resources or information flows. This approach seeks to understand whether the inequalities observed between social actors can be explained through differences in the access to social capital. In other words, do certain individuals enjoy more success than others because they know how to mobilise or have inherited networks that give them a comparative advantage in terms of finance, prestige, knowledge or information? Mark Granovetter's (1983) theory of the "strength of weak ties" that stipulates that it is easier to find a job through more distant contacts than through friends who have access to the same information sources is an example of this approach. Similarly, Ronald Burt's (2005) theory of "structural holes" shows that individuals that play intermediary roles (brokers) are promoted more frequently than others in business because they have access to new information that makes them indispensable.

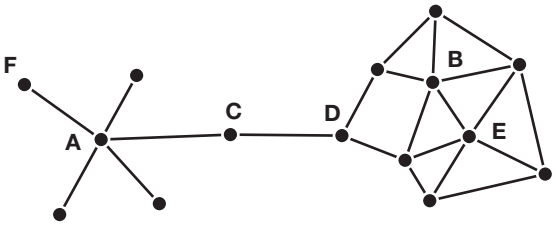
On the other hand, social network analysis seeks to understand why certain social actors tend to form homogeneous communities. If social actors are free to choose their values, norms and comportment that most closely suit their own, then why is such homogeneity observed in human societies? This approach shows that social networks encourage the adoption of social norms as effective as they are informal. It is by sharing the same places, real and virtual, that forms communities within which social behaviours and political ideas will spread. Christakis and Fowler's (2007) research on the transmission of obesity in the United States or Andrew Papachristos's (2009) work on criminality are representative of this kind of approach. They show that social behaviours can be explained by reciprocal connections between actors within a network more than by individual determinants such as age, gender or nationality.

The concept of centrality

Over the past decades several concepts and measures have been developed to take into account the advantages and constraints inherent in social networks (Hanneman and Riddle, 2012). Among them, the most common is without doubt the concept of centrality, which reflects the structural importance of a social actor in a network.

- Certain actors are central because they have numerous connections. The term *centrality of degree* indicates the degree to which an actor is rooted within a dense community of friends, parents or allies, which impart confidence and stability. Formal and informal associations reinforce the advantages of degree centrality. In Sahelian Africa, for example, a trader that has numerous business relations within a religious fraternity is able to count on privileged access to credit or timely aid in periods of difficulty. Degree centrality is a localised measure that takes into account the number of social links that an individual possesses. It does not consider relationships at further degrees of separation within the entire network, which can also have impacts on individual autonomy. In the network portrayed in Figure 3.4, for example, actors A, B and E have the highest degree centrality with five links each. Their structural positions, however, differ when the whole network is considered: while B and E are linked to other actors that are themselves well-connected, A is connected to four actors that are only linked to him or her.
- One of the key observations of social network analysis is that the number of relationships is often less important than their

Figure 3.4
Degree, eigenvector, betweenness and closeness centrality



quality. In other words, if it is important to be connected to many people, it is also crucial to be connected to individuals that are themselves central, such as B and E in Figure 3.4. Eigenvector centrality measures the degree to which nodes are connected to other well-connected nodes and is an indicator of influence. Eigenvector centrality is a general measurement that reflects structural constraints within a network better than degree centrality.

- Other actors are considered central because they link communities that, without them, would be disconnected. These intermediaries or *brokers* have a high betweenness centrality because they have access to resources or information that is not immediately available in their community of origin. West African traders leverage this form of centrality by taking advantage of different legislative environments in different countries to supply markets. Actors C and D in Figure 3.4 have the highest betweenness centrality because they connect two subgroups that would otherwise be disconnected.
- Finally, centrality can reflect the distance that separates individuals from the rest of the network. This closeness centrality is particularly important for actors that are the closest to the highest spheres of political and economic power without actually being in charge. This calculation assumes that every actor in the network is connected by at least one link, such as in Figure 3.4, where actor F is particularly far away from the centre of the network and, as a result, has quite weak closeness centrality.

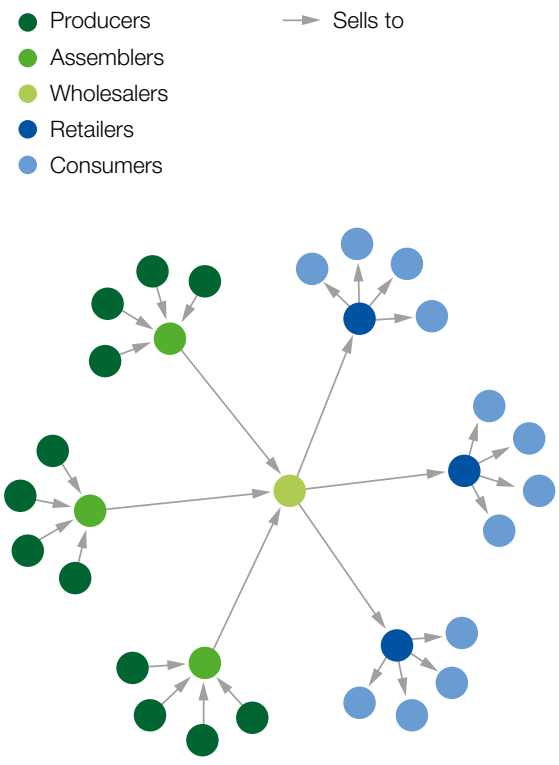
Differences between degree, eigenvector, and betweenness centrality can be illustrated in a trader network that represents a simplified version of the rice value chain studied in this report (Figure 3.5). In this network, actors play five different roles. Producers cultivate the rice that they sell to rural dealers immediately after harvest. Rural dealers centralise the rice before sending it to urban wholesalers. The rice is stored in depots to await the most favourable market conditions, husked, and then sold on to retailers that distribute it through local markets. This structure is relatively simple to the extent that the producers are separated from consumers by only four degrees and because the rice is not involved in any major production processes. Value added derives from transport, storage, and husking.

In this general network, the wholesalers situated between the rural intermediaries and retailers are the most central no matter which measure is used (Figure 3.6). Their structural importance in terms of betweenness centrality reflects the fact that wholesalers are an essential link in the process of exchange between producers and consumers. Without them, the network would be fragmented in segments that would, on their own, be incapable of delivering the agricultural product to the final consumers. Wholesalers are equally well-connected to other actors with multiple links: as a result, their eigenvector centrality is higher than other actors as well. In a network where the direction of trade linkages is known, degree centrality allows to distinguish between rural intermediaries and retailers. The first group has a high *in-degree* centrality because they buy agricultural products from several producers, while the second group has a high *out-degree* centrality because they sell their products to numerous buyers. Producers and consumers exist on the peripheries of the network and have only one link, inward or outward, with the rest of the actors such that their betweenness centrality is zero and their degree centrality is weak.

Constraints inherent in network structure

Social network analysis also enables the measurement of the constraints operating on

Figure 3.5
Simplified trade networks showing five categories of actors



Note: A circle represents each actor in the network. Links between actors indicate who sells the rice to whom and the colour indicates the role that each actor plays in the network.

each individual due to the general structure of the network. Very centralised networks, like a star network where everyone is connected to a central node, are known for generating relations of dependence while still being quite effective at transmitting information. By contrast, very decentralised networks are perceived as more egalitarian but less adept at co-ordinating complex activities because of the lack of a central authority (OECD/SWAC, 2017) (Figure 3.7).

The general characteristics of a network – its topology – enables a better understanding of the process through which social inequalities reproduce. In numerous agricultural sectors, for example, women are relegated to certain lower-skilled activities such as processing and packaging while men occupy more remunerative positions, such as wholesaling (FAO, 2010). This division of labour can be highlighted through a relational analysis that maps the centrality of individuals according to attributes, as show in Figure 3.8. In this type of network, it is evident that women occupy structurally marginal positions in the general organisation of trade flows.

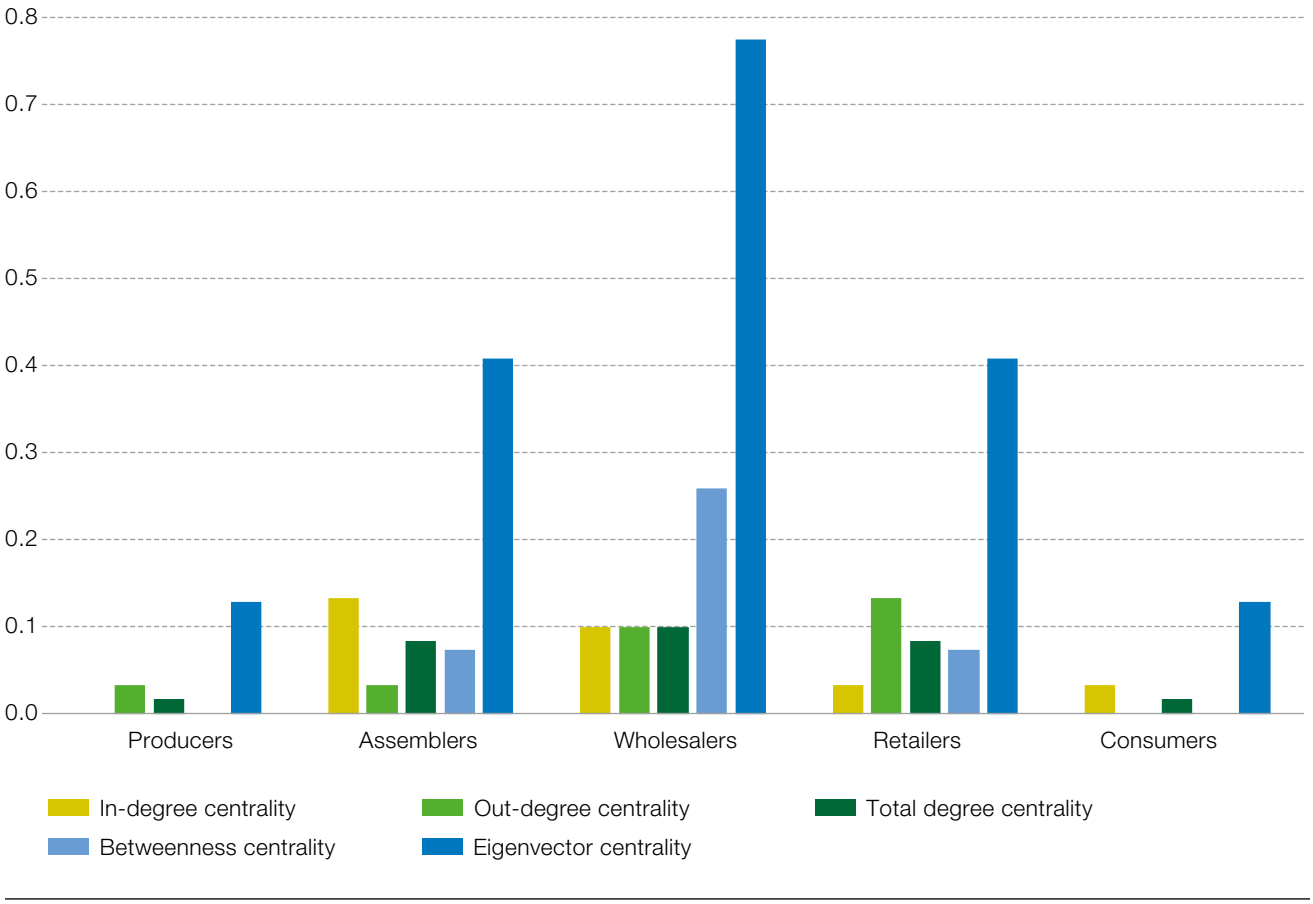
Social networks and economic performance

The study of the impact of networks on economic activities is a burgeoning field, particularly with respect to labour markets, innovation and commerce (Granovetter, 2005; Fafchamps, 2006). In Western countries, the benefits attributed to social networks are particularly evident for skilled workers in knowledge-intensive sectors, who use their network of contacts to negotiate higher salaries by playing off competitors (Goyal, 2012). The resources available to intermediaries also tend to support professional access and success in sub-Saharan Africa. Studies conducted in South Africa (Burns et al., 2010; Hofmeyer, 2010; Schöer et al., 2012), in Ethiopia (Mano et al., 2011) and in Burkina Faso (Nordman and Pasquier-Doumer, 2015) confirm that the best-connected individuals enjoy better professional opportunities than others, even as the African labour market is fragmented into a multitude of often informal enterprises where average qualifications tend to be lower.

Innovation is another area where the impact of social networks can be measured. In sub-Saharan Africa, studies conducted on the adoption of technology show that agricultural entrepreneurs follow the advice of those that are culturally close to them rather than experts with whom they have no personal connection (Conley and Udry, 2010; Isaac, 2012; Isaac and Matouš, 2017; Wencélius et al., 2016). In Ethiopia, where the majority of studies on networks and innovation were conducted, men have more contacts than women (Matouš et al., 2013). Social networks formed by peasant women, however, are more likely to adopt new planting techniques and augment agricultural yields (Mekonnen et al., 2018).

Social networks are also likely to enable commercial activity. In a region where information about markets and prices is difficult to obtain, social networks function as a safety net that neither formal institutions nor the state

Figure 3.6
Centrality by type of actor in a trade network

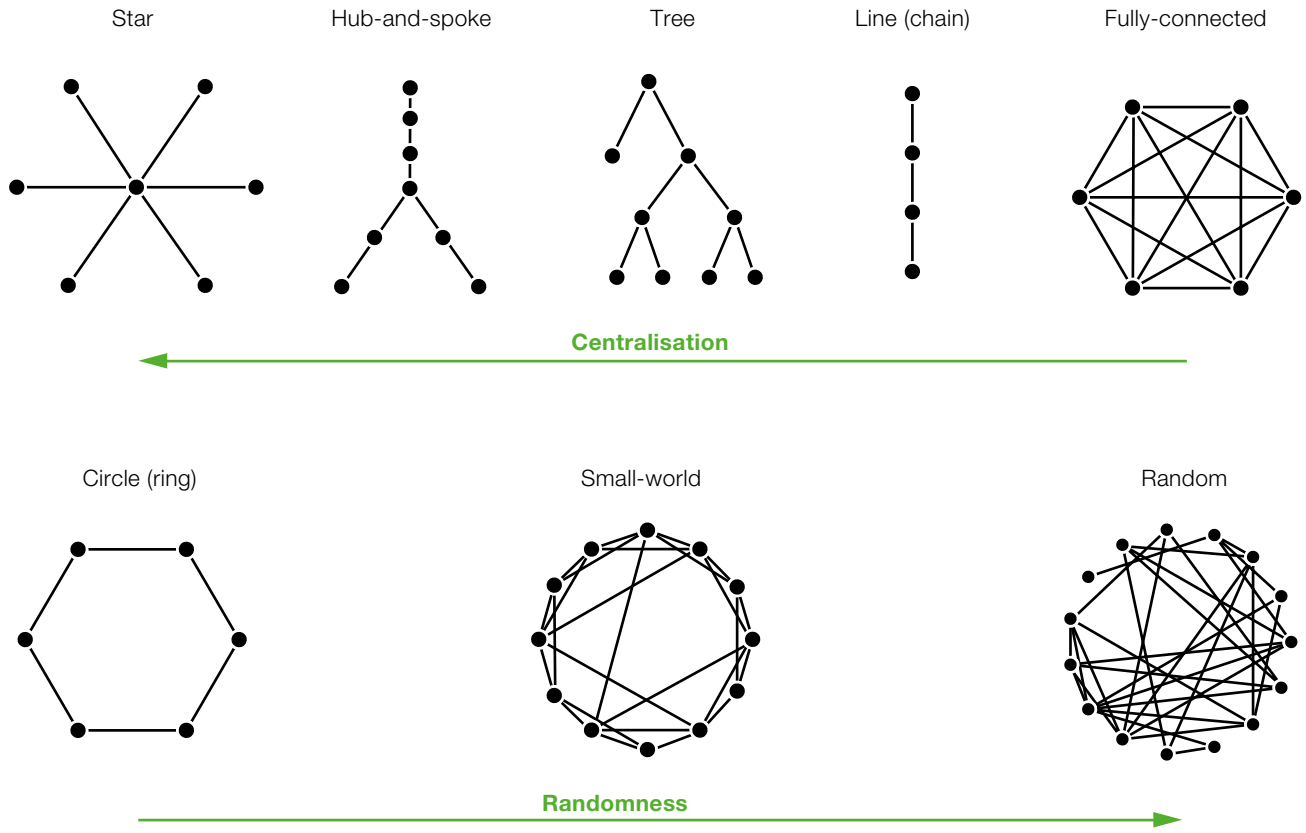


is capable of providing. They allow traders to increase profits, access credit and reduce the uncertainty inherent in their activities by establishing trust relationships with their suppliers and clients (Fafchamps and Minten, 2002). This is particularly true among the traders and vendors in informal sectors (Berrou and Combarnous, 2011; Walther, 2015; Kuépié et al., 2015). For urban entrepreneurs in Burkina Faso, for example, business success depends on both trust relationships developed in networks of solidarity as on the purely professional relationships that link them to commercial partners (Berrou and Combarnous, 2012).

Several historical examples show that these trust relationships in the precolonial era were rooted in birth, parentage and ethnic belonging and that traders preferred to recruit partners from nearby building close-knit business communities (Grégoire, 1992). Family relationships were crucial in precolonial Hausa long-distance cola trading relationships, similar to the Kooroko traders in present-day Mali (Amselle, 1977; Lovejoy, 1980). In numerous regions, the transmission of professional know-how through families did not survive the reorganisation of trade routes during colonial times. In the east of Niger, for example, economic difficulties in the first years of colonisation, uncertainty in the cattle trade and the division of familial estates prevented the emergence of familial dynasties (Baier, 1980).

Social networks, however, do not only bring benefits to members (Kuépié et al., 2015). Recent studies show that social networks can also impose social costs that penalise the autonomy of actors and prevent them from realising professional aspirations (Meagher, 2005; Bähre, 2012).

Figure 3.7
Examples of network topologies



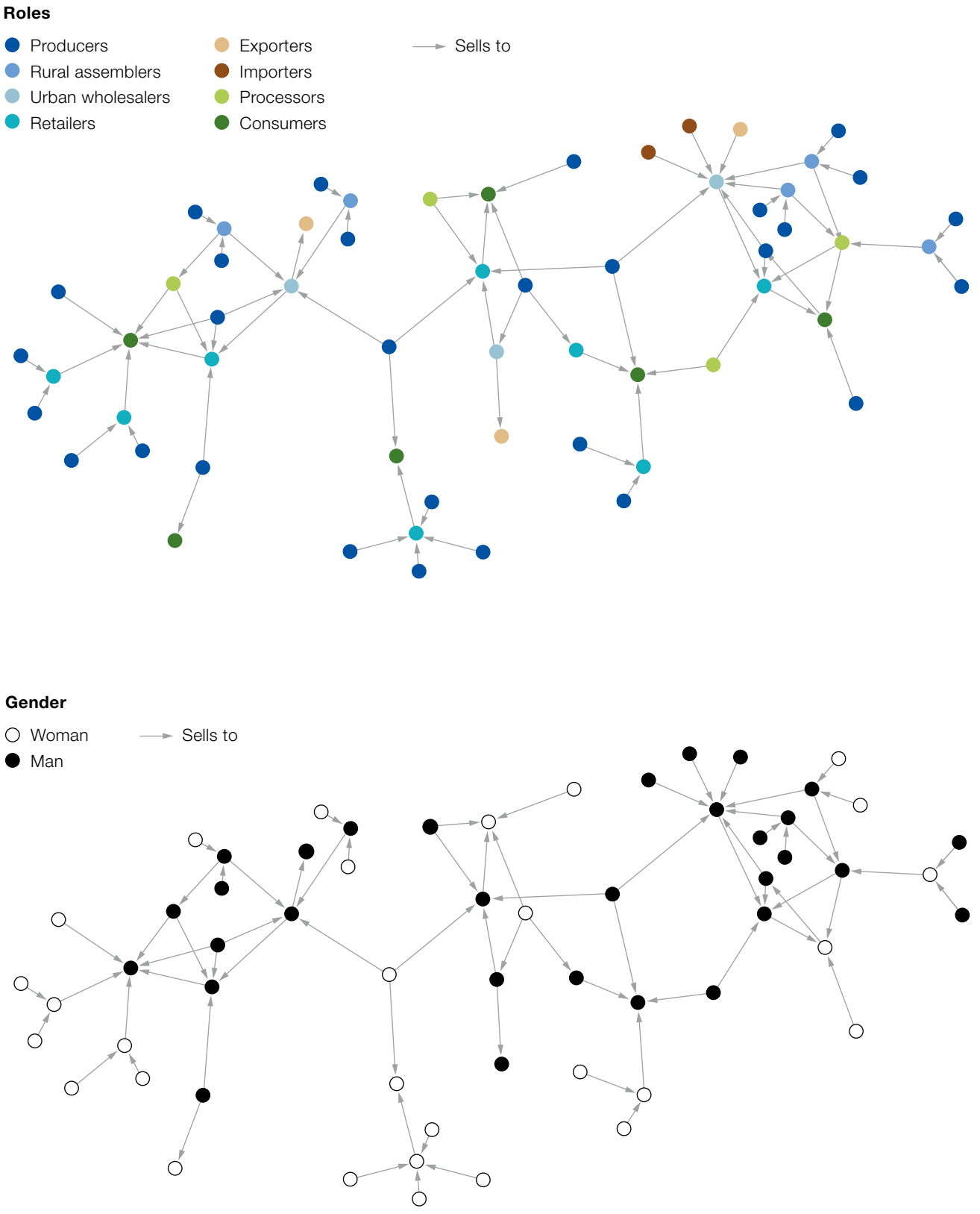
Source: OECD/SWAC 2017

Parental linkages, for example, can be a double-edged sword: links of solidarity carry numerous social obligations that weigh on commercial activity and limit wealth accumulation. In Zimbabwe, for example, parental linkages developed between small and medium enterprises have a negative influence on new technology adoption because they prevent entrepreneurs from connecting with partners that have access to new means of production (Chipika and Wilson, 2006). Entrepreneurs whose professional networks depend on solidarity relationships must also play the role of social patrons in order to assure the social security of their employees and in response to multiple financial solicitations related to their status.

Economic actors attempt to escape these social obligations, either partially or completely, using three main strategies. The first consists of masking the sources of their revenues by voluntarily adopting a modest way of life. This strategy is, however, difficult to enact in West Africa where ostentatious spending is a part of the social practices of successful merchants. A second strategy involves joining a reformist religious movement that preaches the traditional values of Islam. The success of the Movement for Suppressing Innovations and Restoring the Sunna *(Jama'at Izalat al-bid'a wa iqamat al-Sunna)* among merchants in Nigeria and Niger is partly explained because this movement preaches frugality, simplicity and solidarity to close family members (Loimeier, 2016). These movements also help to redefine the way women are supposed to dress, behave in the public space and access education (Masquelier, 2009). Finally, the third strategy developed by traders involves moving sufficiently far away from their

Figure 3.8

Roles and gender in a commercialisation network



Source: Walther and Renk (2017) based on Mishili et al. (2009)

community of origin to escape social obligations, while staying close enough to maintain their role as cultural brokers (Whitehouse, 2012).

In addition to incurring social obligations, social networks are also liable to exacerbate social inequalities. Social networks tend to privilege the best-connected individuals rather than the most deserving, which renders access to markets more difficult for economic actors that are not part of a network. Another potentially negative aspect of social networks is their capacity to transcend sectoral and administrative levels, which can lead to the destabilisation of state fiscal and monetary control. In competition with formal institutions, interpersonal relationships developed within networks are often associated with the criminalisation of the state and blamed for the propagation of corruption among political elites, public officials and the business community (see Meagher, 2012 for a summary). The unpredictability of state fiscal policy and customs regulations has thus driven big commercial interests in West Africa to develop clientelist links with political decision-makers or to enter politics themselves (Tidjjani Alou, 2012).

The duality of social networks requires West African entrepreneurs to find a balance between two major forms of centrality: the degree centrality synonymous with solidarity with their local community, and the betweenness centrality that furnishes the external resources necessary for profit and innovation. Entrepreneurs that only have internal or external links are unlikely to succeed in business: they lack an indispensable dimension of social capital. This principle already extensively documented in the qualitative literature on social capital (Woolcock and Narayan, 2000) is corroborated by studies of sub-Saharan social networks. In the border region that separates Benin from Niger and Nigeria, for example, the most prosperous long-distance traders are those that are simultaneously deeply embedded in their community and capable of building connections with other communities outside their own ethnic groups and countries (Walther, 2015). In Uganda, one study of urban and rural entrepreneurs also confirms the fundamental duality of social networks: contacts established by individuals can be synonymous with both resources and obligations (Solano and Rooks, 2018). Women's access to capital is much lower than that of men because of a lack of access to formal credit and control over household spending.

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Chapter 4

Gender and cross-border trade networks

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Chapter 4 maps the women and men involved in the rice sector of the Niger River valley, between Benin, Niger and Nigeria. Using a relational approach, this analysis shows that women occupy a structurally peripheral position in the network relative to men no matter which measure of centrality is used. There are fewer women in the sector, they have fewer commercial partners, they are less likely to be intermediaries and are much less well-connected to very central actors than their male counterparts. These findings demonstrate the importance of social networks to regional economic development and the social inequalities that they can generate. From a spatial perspective, this study shows that three-quarters of entrepreneurs develop business relationships within their own countries. Only a minority of wholesalers are capable of delivering rice to the large Nigerian consumption markets despite Nigeria's import restrictions.

Key messages

- The general structure of business relations within the rice network imposes an unequal division of labor based on gender.
- The most prosperous actors in the rice network are those who have established numerous ties within and beyond their community.
- Women earn less and are less central in the rice trade network than men.
- Despite import bans, most of the Dendi's rice production reaches Nigerian markets.

WOMEN IN THE CROSS-BORDER RICE TRADE NETWORK

West African women play a major, though often underestimated role, in the production, distribution and sale of regional agricultural products (see Chapter 2). Their contribution to the rice value chain and the structural constraints on their activities within commercial networks are the subject of this analysis. It uses a relational approach to piece together commercial relationships between men and women in the Niger River valley between Benin, Niger and Nigeria (see Chapter 3).

The rice value chain involves women and men at different stages of production, processing, transport, warehousing and sale. Revenues from commerce related to rice contributes to local economic development and the general wellbeing of households. Local rice is also a strategic product for the states in the region interested in reducing dependence on rice imports from Asia and implementing policies to support national production. Finally, local rice frequently crosses national borders and so is an excellent case through which to study cross-border trade networks. These characteristics make rice a particularly interesting focus of analysis.

THE RICE SECTOR IN WEST AFRICA

Rice has enjoyed a long history in the West African diet. In fact, the African species of rice *(Oryza glaberrima)* was domesticated in the Niger River bend some 2000–3000 years ago and was only gradually replaced with Asian rice *(Oryza sativa)* in the 16th century (Linares, 2002). Unlike in Asia, where rice dominates consumer diets, African diets have traditionally been more diverse with rice featuring amongst a wide range of staple products such as millet, maize, and cassava. Today, demand for rice is annually increasing at a rate of 6%, the highest in the world. Factors contributing to the increasing popularity of rice include income growth, upward trends in rice harvest production resulting from the adoption of new seed variants, and rapid urbanisation.

The ongoing expansion of West Africa's cities has led to a strong demand for fast and convenient food products accessible to urban households. Shifting preferences towards convenience food is forecast to continue in the context of West African urbanisation and sustained macroeconomic growth (Allen et al., 2018).

An increasing deficit in production

The current area devoted to rice cultivation in West Africa amounts to more than 6 million hectares, of which almost 2.4 million hectares are located in Nigeria. West Africa has four ecological rice production systems: rain-fed upland (40%), rain-fed lowland (38–40%), irrigated (12–14%), and mangrove swamps (4%) (Katic et al., 2013). Lowland production systems predominate in coastal areas along the Gulf of Guinea and rain-fed crops in plateau areas. Irrigated rice is found in the Senegal River valley and in the *Office du Niger* in Mali to the North of the Ségou region (Map 4.1).

Rice production in West Africa is still strongly dependent on climate variability when it comes to determining seasonal outcomes. Due to the ongoing dependence on rain-fed production, below average rains mean the difference between a successful harvest and market shortages. The growth is in large part due to increased rain-fed rice production that can be primarily attributed to the increased area of land under cultivation (the average annual growth rate of areas cultivated in rice has increased to 3.8% annually). In contrast, yields have more or less continued at the same pace as before, increasing from 1.5% to 1.6% per year. These rates of growth in production through the extension of land areas are unlikely to meet the needs of consumption, which are continuing to grow at a rate of 4% to 5% a year between 2015 and 2017 (USDA Foreign Agricultural Service, 2017).

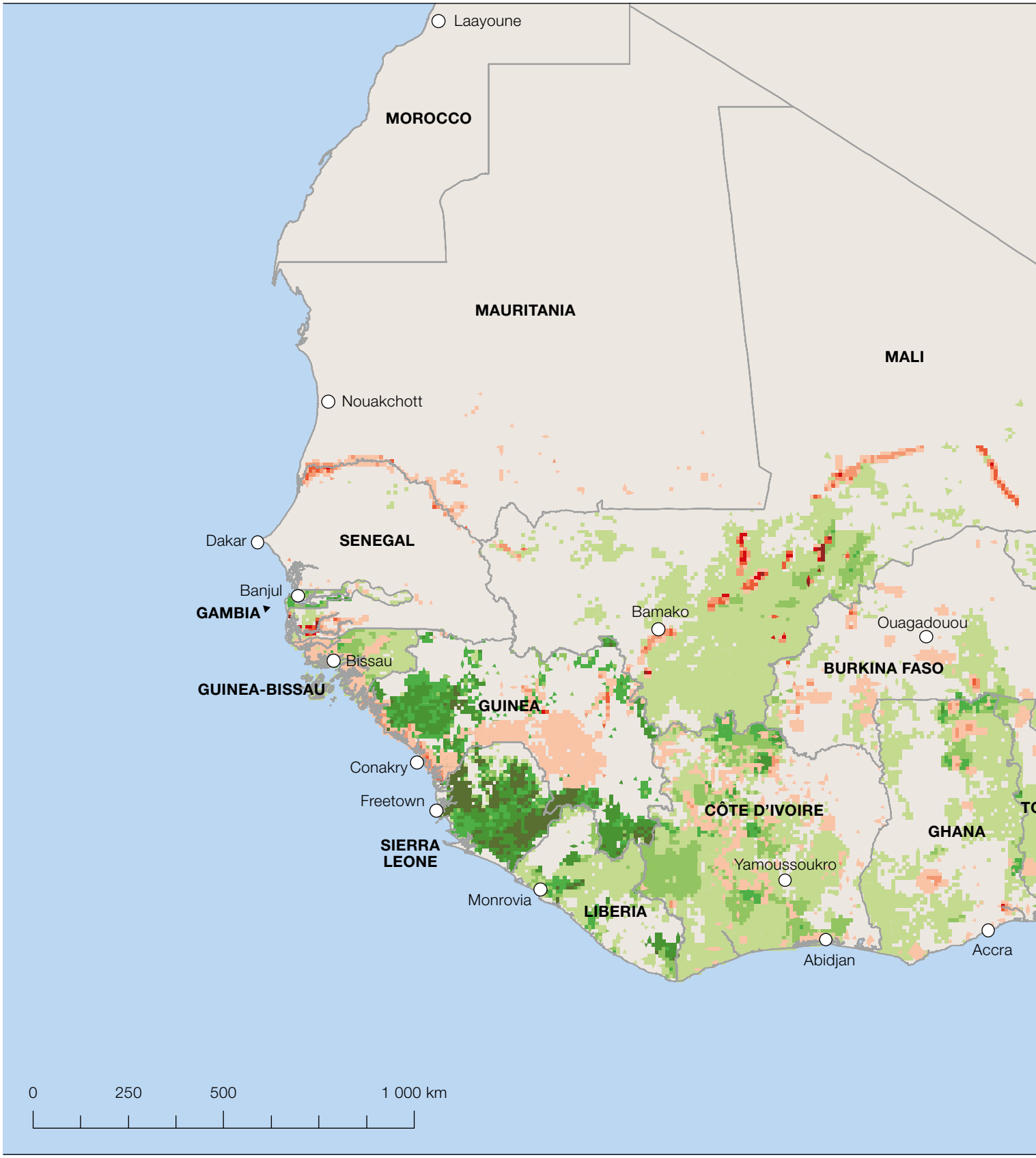
Small farmers who engage in rice production rely on rain-fed conditions with limited use of improved seeds, fertilizer, mechanisation, post-harvest facilities and absence of water management. In the meantime, rice demand has increased both quantitatively and qualitatively while the quality of local rice production has stagnated in recent years. Although market dynamics indeed seem to indicate higher income opportunities for rice growers, the outlook seems to be less bright for producers dependent on irrigation systems in places where competition for land is fierce. Because of ongoing population growth and the scarcity of new land developed for irrigation, the division of existing farmsteads is reaching its maximum capacity in some areas (OECD/SWAC, 2011).

Across the West African region, production varies widely: the highest rates of productivity are found in the irrigated areas in Mali and Senegal; upper mid-range yields in the improved rice-growing areas of Ghana and Nigeria; and the lowest yields are those in Benin and Liberia, due to the predominance of rain-fed upland rice production and poorly developed irrigation systems. While yields fall well below the five to seven tonnes per hectare reported in Argentina, Colombia, Peru, the United States and Vietnam, the average rice yields in Mali and Senegal, estimated at three tonnes per hectare, are comparable to those of Thailand.

Low productivity and high processing and marketing costs are impediments to the competitiveness of local rice in the regional market. While yields have improved, the farm-rate price of a tonne of paddy – which is already attractive in many West African countries compared

Map 4.1

Irrigated and rain-fed rice production basins in West Africa, 2005



Note: Data missing for northern Nigeria. Source: HarvestChoice 2005

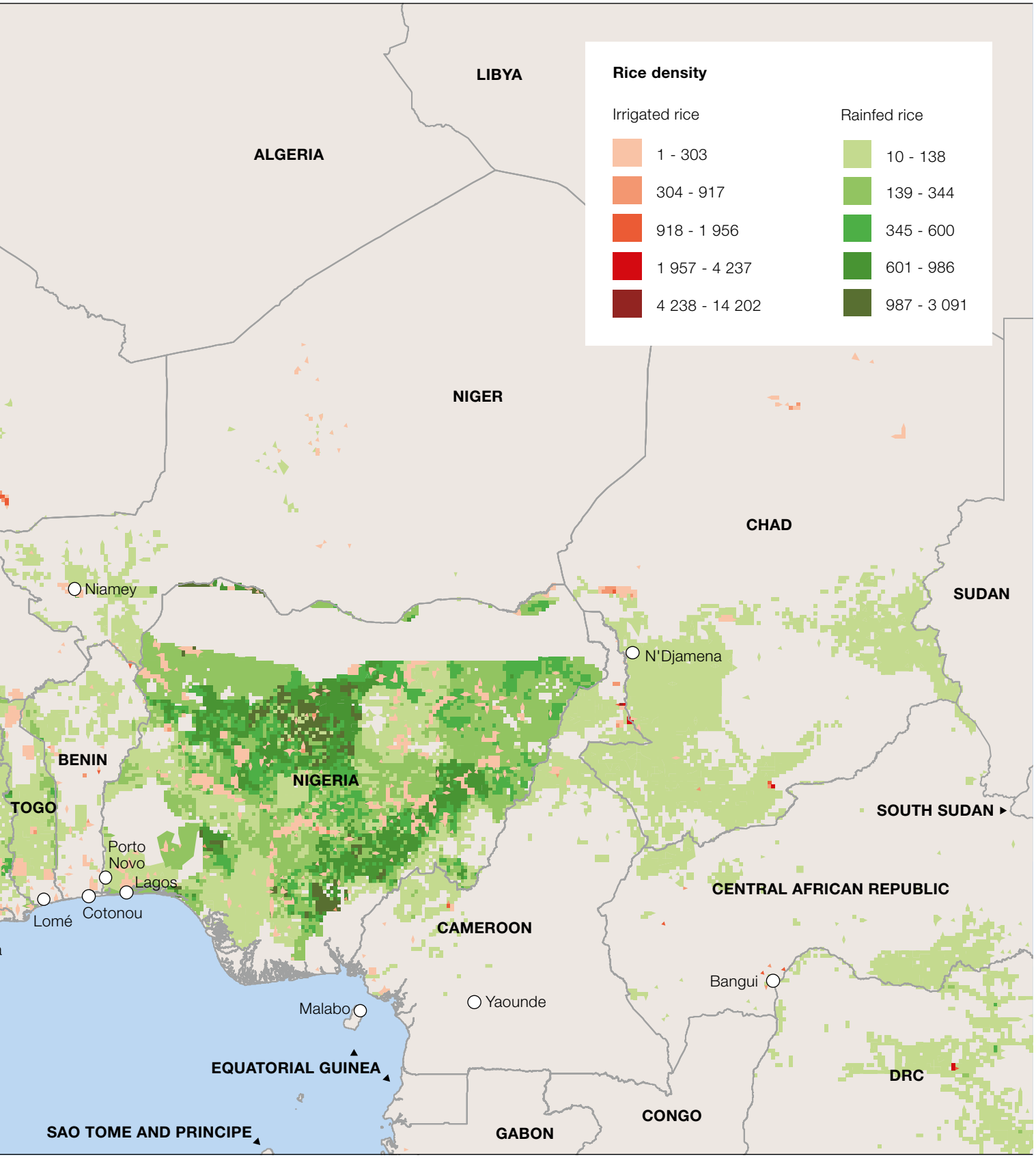
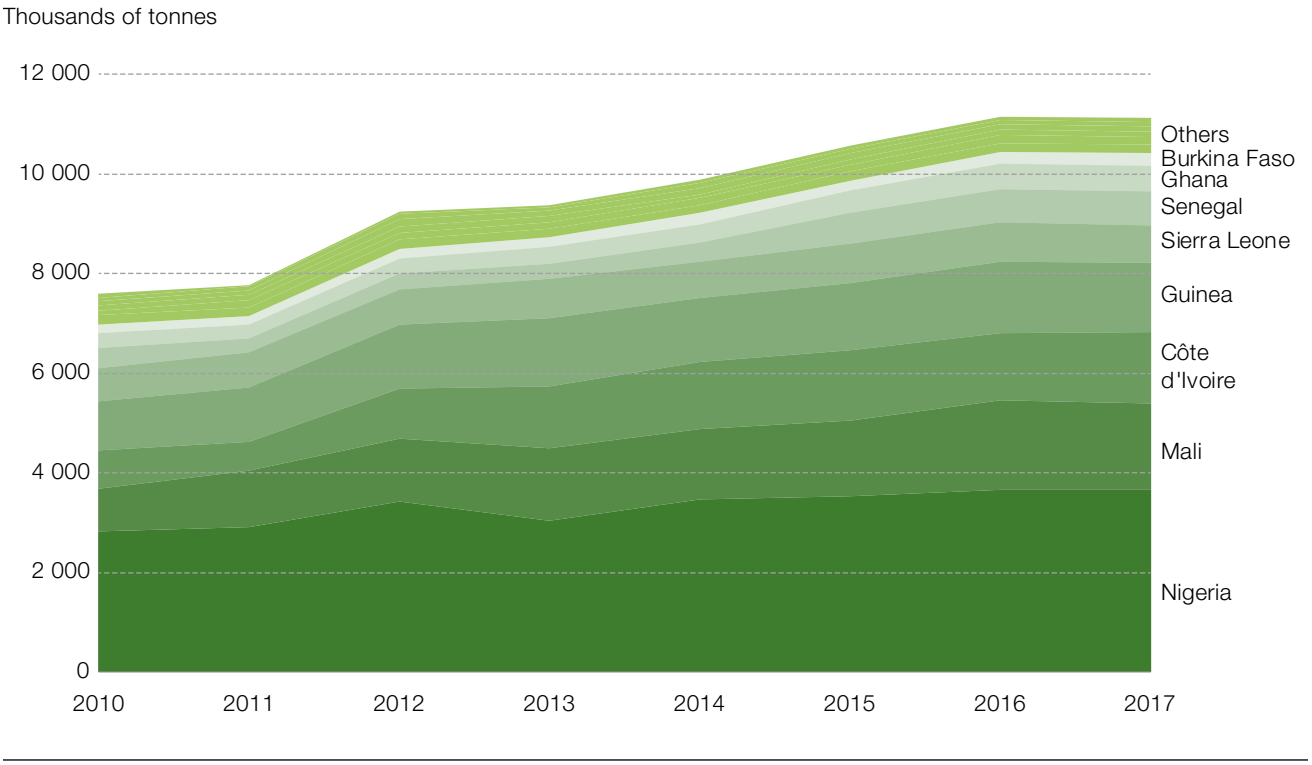

Rice density
Irrigated rice
1 - 303
304 - 917
918 - 1 956
1 957 - 4 237
4 238 - 14 202
Rainfed rice
10 - 138
139 - 344
345 - 600
601 - 986
987 - 3 091
LIBYA
ALGERIA
NIGER
CHAD
SUDAN
Niamey
N'Djamena
BENIN
NIGERIA
TOGO
SOUTH SUDAN
Porto Novo
Lagos
Lomé
Cotonou
CENTRAL AFRICAN REPUBLIC
CAMEROON
Bangui
Yaounde
Malabo
EQUATORIAL GUINEA
DRC
CONGO
GABON
SAO TOME AND PRINCIPE

Figure 4.1
Rice production by country, 2010–17



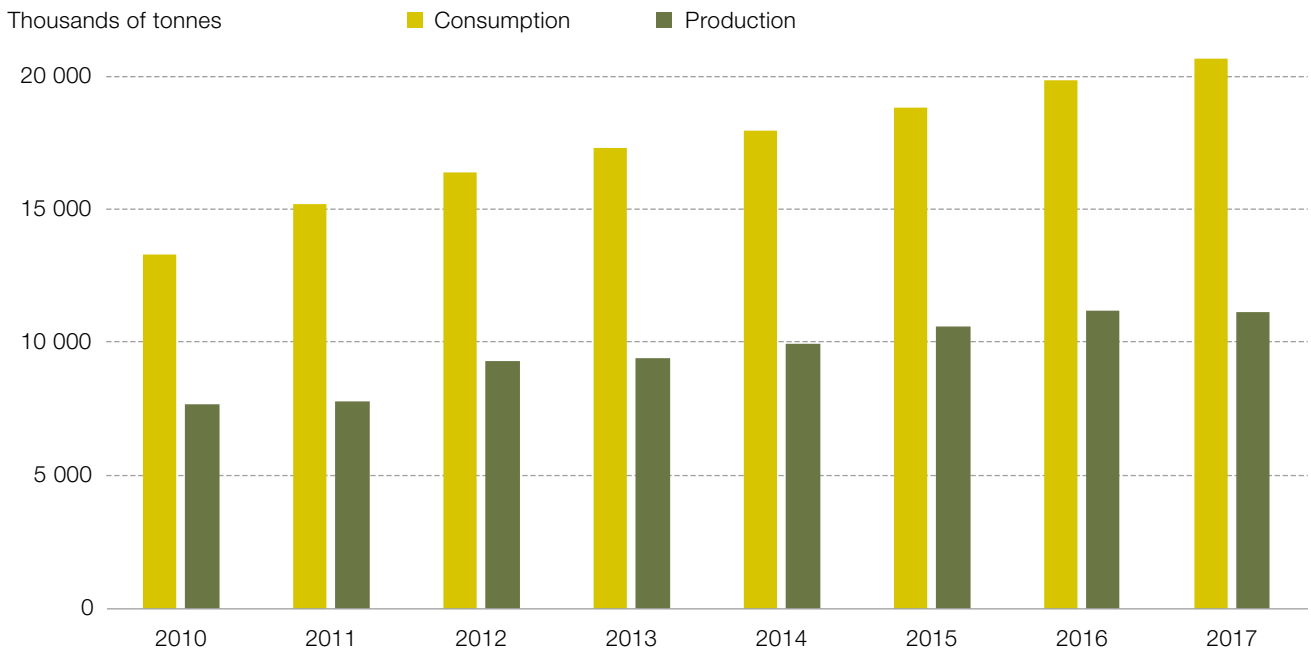
Source: USDA Foreign Agricultural Service 2017

to prices in major exporting countries – could be further reduced. In 2011, production of a tonne of paddy rice cost USD 220 in Ghana and Nigeria, USD 210 in Senegal, USD 180 in Mali, and USD 140 in Benin. These prices are close to the levels observed in Vietnam (USD 130), Thailand (USD 190) or even in the United States (USD 225), all three of which are major rice exporters. As rice is mainly paid in cash, its price has a major impact on the food security of households. Considering the high level of rice consumption within the most vulnerable households, a shock to rice prices is likely to produce negative effects on the well-being of consumers in Guinea, Guinea-Bissau, Liberia, Senegal and Sierra Leone (OECD/SWAC, 2011).

Regional rice production has climbed over the last decade as a result of public investment and private investments from small-scale producers. In 2017, West African rice production exceeded 11 million metric tonnes, an all-time record (Figure 4.1). Nigeria remains forecast to drive the sub-region's output increase as producer benefits from the government's continued policy on rice self-sufficiency and a decline in rice imports. Record-breaking yields are also officially anticipated in Guinea, Mali, Sierra Leone and Senegal. Aided by generally conducive rains and government support, production is also seen expanding in Chad, Ghana, Liberia, Mauritania and Togo, while Benin, Burkina Faso, Gambia and Niger are all expected to face output contractions (FAO, 2018). The launch of Ghana's Planting for Food and Jobs Campaign is expected to support continued rice production growth in the medium term. Mali's standing as the only West African country close to self-sufficiency in rice consumption is reinforced by an expansion in rice production of 2.9 million tonnes in 2017 attributed to sustained high paddy prices and strong government investments in fertiliser and agricultural machinery (FAO, 2017).

Despite these encouraging results, the region presented an estimated deficit of 9.5 million metric tonnes in 2017 (Figure 4.2).

Figure 4.2
Rice production and consumption in West Africa, 2010–17



Source: USDA Foreign Agricultural Service 2017

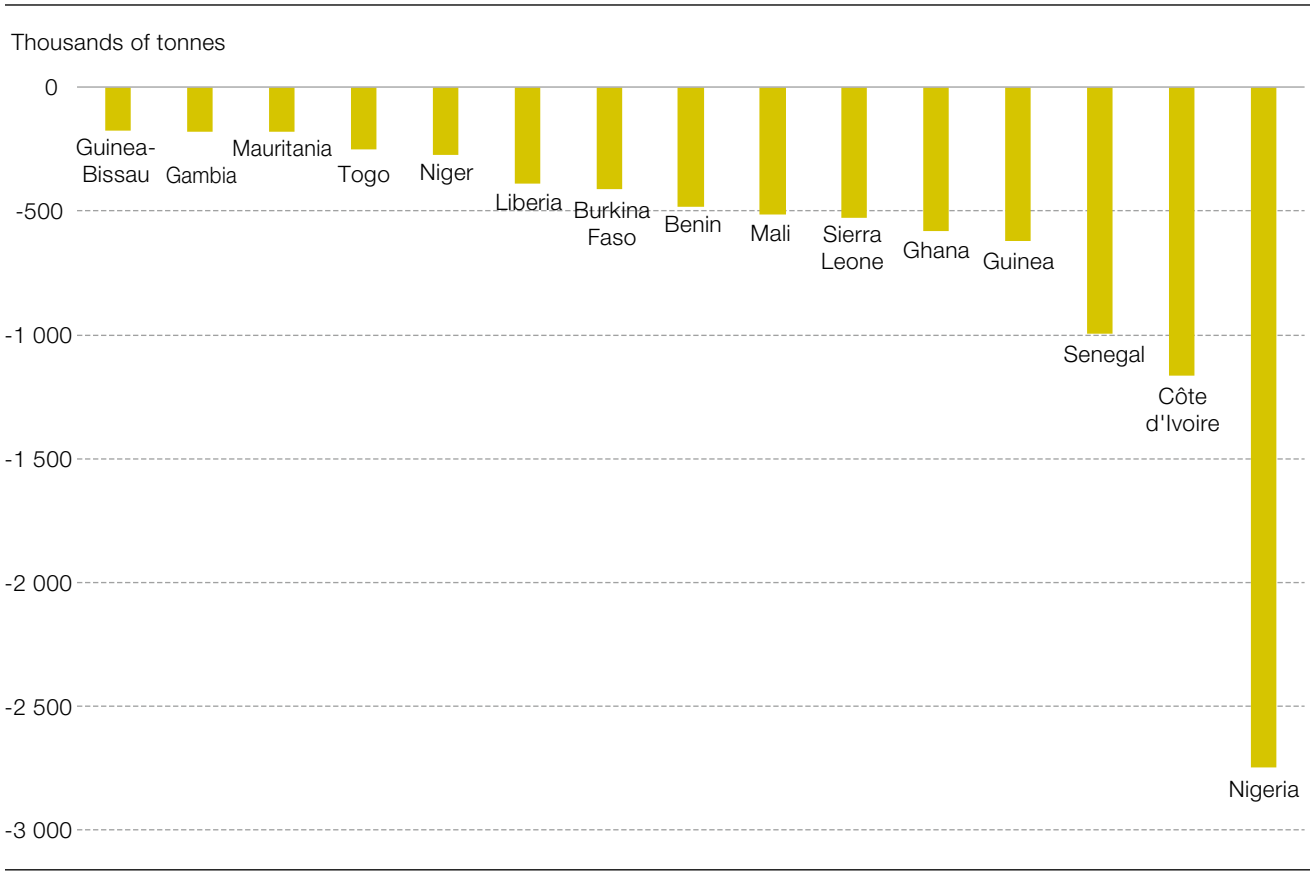
Although West Africa has long been a rice deficit region, the deficit is structurally growing even with a solid growth in rice production and a decrease in imports. The deficit is particularly important for countries that rely massively on imports from Asia (Figure 4.3) such as Nigeria (-2.7 million tonnes in 2017), Côte d'Ivoire (-1.2 million tonnes) and Senegal (-1 million tonnes). The chronic nature of the West African rice deficit suggests that a large part of the region remains dependent on a volatile international market. The most vulnerable communities will remain at risk in case of a new surge in global rice prices.

Rice consumption is growing fast in West Africa

Rice consumption trends have grown markedly across West Africa. In 2017, total rice consumption in the West African region was estimated at 20.6 million metric tonnes, growing at around 3% (Figure 4.4). In coastal countries, rice consumption is close to South Asian levels: over 60 kilogrammes per capita per annum in Guinea, Guinea-Bissau, Liberia, Senegal and Sierra Leone. In these countries, which are net rice importers, the share of the commodity in the overall food consumption of the poorest households is especially high. Rice also accounts for a large share of food consumption in Côte d'Ivoire, Gambia, Mali and Mauritania, where each person consumes between 30 and 60 kilogrammes of rice a year.

Rice consumption per capita is lower in the Sahel countries and in certain coastal countries such as Benin, Ghana, Nigeria and Togo, where consumption of dry cereals (maize, sorghum) is much higher and has lent new momentum to rival food sectors. Consumption in the coastal regions leans heavily on cassava flour *(gari),* a product for which demand has soared in Benin, Ghana, Guinea, Liberia, Nigeria and Sierra Leone. The consumption of maize, both imported from the West African region and from overseas, has also grown over the last decade. Consequently, rice production strategies for small holders in the region are impacted by the option to engage in alternative crop production where there may be more

Figure 4.3
Deficit in rice production by country, 2017



Source: USDA Foreign Agricultural Service 2017

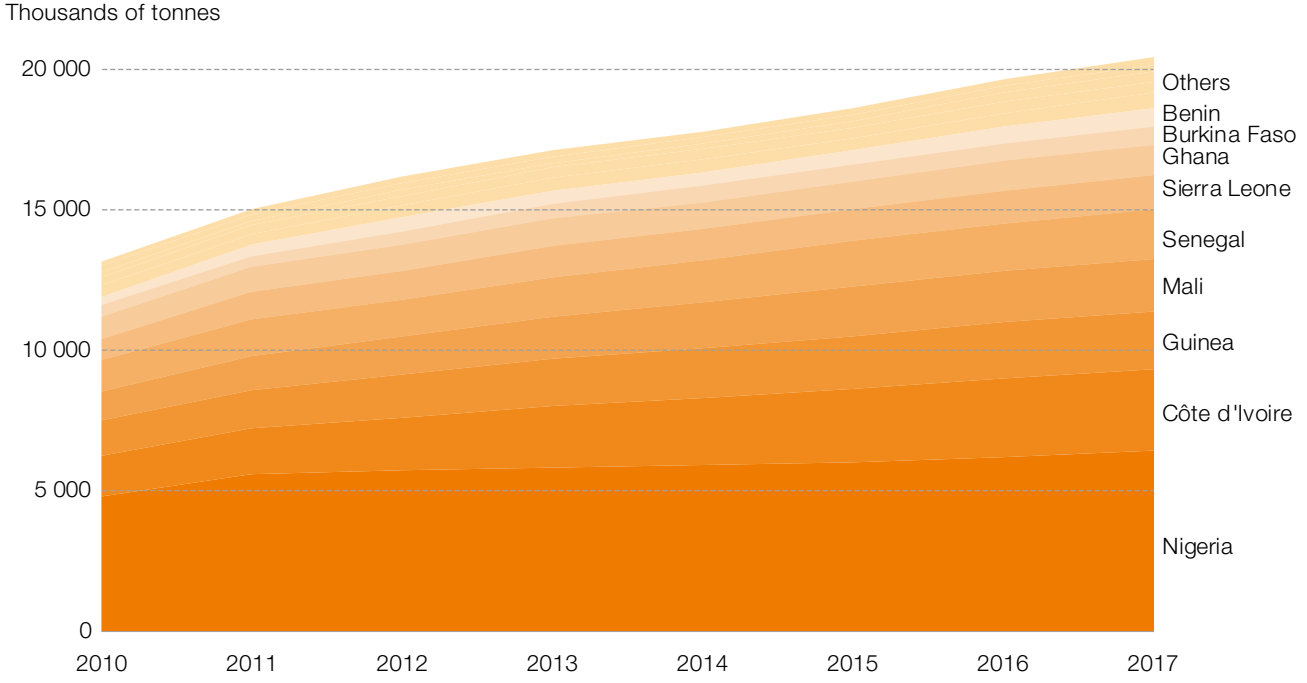
favourable market potential. This explains the common occurrence of dual production systems where rice is grown alongside other staple and cash crops, thus lowering market risks and offering substitutes for household food consumption (OECD/SWAC, 2011).

Consumer rice preferences in West Africa are dominated by four major brands: long grain, broken rice, parboiled rice and aromatic. The heterogeneous nature of West Africa's rice market has influenced the practices of large international rice importers such as Olam and Louis Dreyfus who established individual country offices rather than regional hubs in order to respond to specific domestic consumer preferences. Generally speaking, local rice is under-patronised due to lower quality standards including impurities. However, in such countries as Mali, Niger and Guinea, a strong demand exists for local rice due to freshness and taste.

There is significant difference between imported and domestic rice prices across the region and between urban and rural areas. Especially in urban areas, imported rice is preferred to locally produced rice because of its physical attributes such as colour and absence of impurities. For example, Nigerian consumers, who have relatively high purchasing power, prefer to buy long grained, fragrant rice, often grown in Thailand. Rice consumers in rural regions or in countries with less purchasing power such as Senegal, Liberia and Guinea are more sensitive to price than quality and therefore mainly purchase lower grades of rice. Overall, choice of imported rice over domestic rice is based on quality. Any improvement in the quality of domestic rice, especially pre- and post-harvest handling qualities, would significantly make it more competitive.

The share of the local market in urban rice consumption varies widely across West

Figure 4.4
Rice consumption by country in West Africa, 2010–17



Source: USDA Foreign Agricultural Service 2017

Africa. In Côte d'Ivoire, only 10% of local rice is consumed outside of rural areas compared to 30% in Senegal and 40% in Nigeria, Mali and Guinea. Local brands such as *Ofada* rice have a particular niche market in Nigeria due to its unique taste. A higher proportion of affluent urban households are associated with consumer preference for expensive rice exports in Ghana and Côte d'Ivoire.

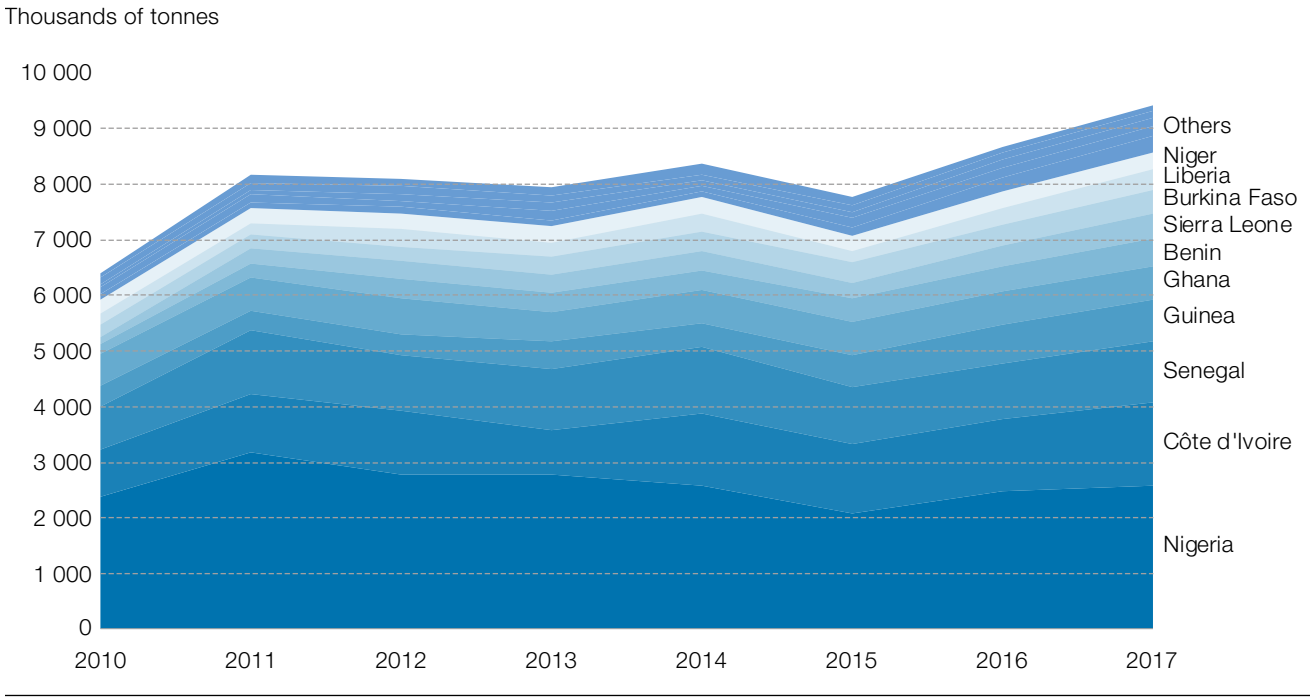
While poor access to urban markets remains a major bottleneck to supplying adequate quantities of local rice to consumers (USAID, 2009), the combination of income growth and urbanisation explains the rising status of rice as a major food staple for West African households (Elbehri et al., 2013). Due to the forecast of accelerating trends in urbanisation, rice is expected to play an increasingly important role for regional food security. By 2020, 60% of West Africans will live in urban areas fuelling higher demand for food imports.

Rapid growth in rice imports

Despite significant increases in domestic production and possessing considerable rice-growing potential, West Africa still imports roughly 40% of its rice from predominantly Asian countries, primarily from Thailand and increasingly, Vietnam (Adjao and Staatz, 2015). The dependency on imported rise was exacerbated in the 1990s, a period during which imports tripled. Rice imports now amount to around 9.5 million tonnes compared to 6.5 million tonnes in 2010. This trend is a fairly general one in all countries in the region. Nigeria, Côte d'Ivoire and Senegal, where some of the main access points for rice imports into the region are located, are the main importers (OECD/SWAC, 2011). Their imports, which reached 5 200 000 tonnes in 2017, represent 55% of the total imports of the region (Figure 4.5). In terms of quality, West Africa imports growing volumes of low-grade rice. While imports of broken rice were almost unknown in the 1970s, that grade now accounts for more than 40% of regional imports.

West African food markets are interrelated, with the continued importance of informal markets despite the impact of liberalisation and the growing significance of regional integration. Informal trade networks are more relevant

Figure 4.5
Rice imports by country in West Africa, 2010–17



Source: USDA Foreign Agricultural Service 2017

for retailers engaged in poor rural areas in contrast with retailers in urban areas who are more likely to buy from wholesalers through official markets. Regional patterns for rice trade networks reveal the significance of import flows from official to informal markets. Rice shipments are often formally imported into one country where import duties are comparatively lower only to be sold informally across borders to traders in local markets at a more competitive price. Quantities sold are usually lower in local rice markets than in large urban markets because of farmers withholding harvests from markets due to a combination of demand from household consumption and the impact of price speculation. Larger local rice volumes are sold in markets such as Mali and Nigeria following the establishment of semi-wholesalers and the effect of out-grower schemes in stimulating local markets.

THE TRINATIONAL DENDI REGION

Traversed for over 120 kilometres by the Niger River, the tri-national zone between Benin, Niger and Nigeria is typically called the "Dendi". This designation, which means "follow the river in the direction of the current" is related to the fact that it was historically part of the most southern province of the Songhai Empire (16th-17th centuries). This ancient region was much larger than the present-day region that bears its name and extended from land downstream of the Songhai capital of Gao to Gaya, to the Zarma-Ganda to the east and also comprised parts of Gurma land on the west bank of the river. The term "Dendi" is used today to designate the area encompassing the cities of Karimama, Tara, Gaya, Malanville, Garou, Dolé and Tanda on the Nigerien and Beninois banks of the river as well as their extension into the *Dandi Local Government Area* in Nigeria.

Historical accounts collected in the region insist on the division of power between indigenous Kyanga and conquering Songhai (Walther,

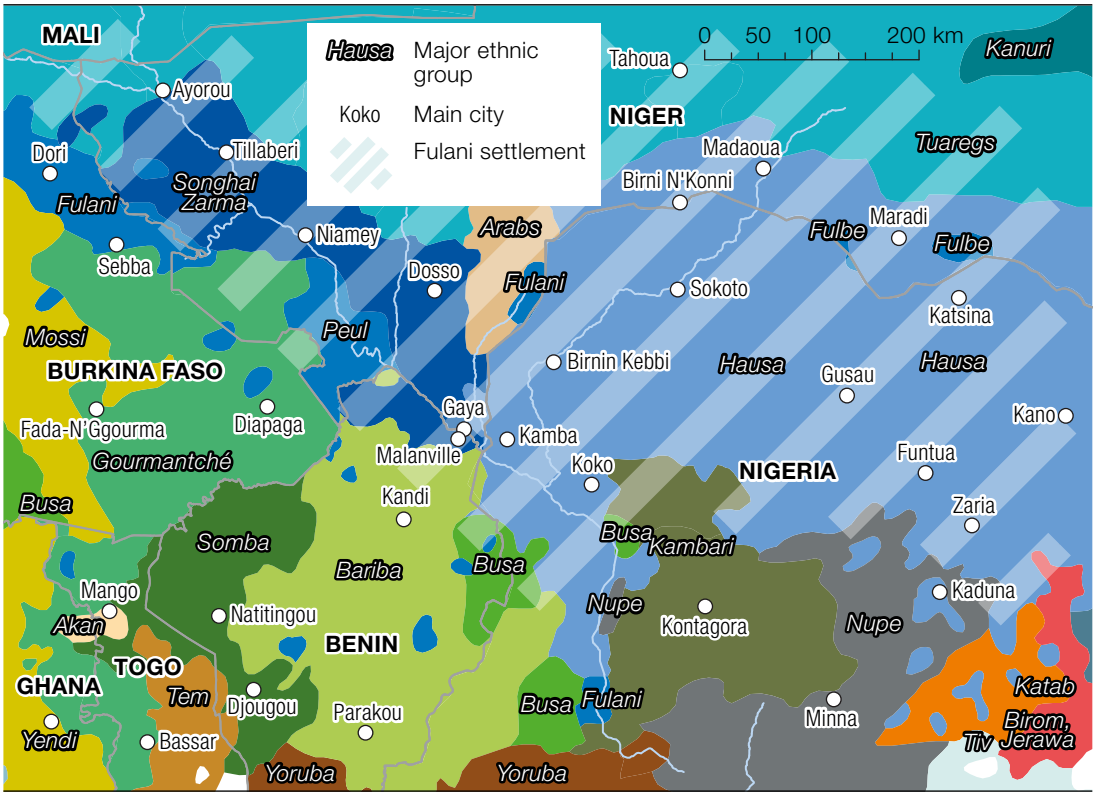
Box 4.1

Ethnolinguistic groups of the Dendi

The Dendi region is populated by six major ethnolinguistic groups (Map 4.2). The Kyanga are present in the Nigerian state of Kebbi and the Niger River valley to Gaya. They speak a Mande language from the Niger-Congo family. The Songhai primarily inhabit the Niger River valley, from the Inner Niger Delta to the Nigerian border and speak a Nilo-Saharan language. Their presence in the Dendi dates back to the dissolution of the Songhai Empire. Closely related to the Songhai, the Zarma populate the regions of Tillabéri and Dosso in Niger. The Dendi speak a Nilo-Saharan language similar to Zarma-Songhai, used in the Niger River valley from Karimmama to Djougou in Benin. The Hausa are present across the north of Nigeria and southern Niger. Their language belongs to the Afro-Asiatic family and is among the most widely spoken in West Africa. The Bariba (or Busa, or Baatombu) populate the Nigerian states of Kebbi, Kwara and Niger as well as the north of Benin. They speak a Mande language similar (but not intelligible) to that of the Kyanga. Finally, the Fulani population extends from Senegal to Sudan. Their language belongs to the Niger-Congo family and is used as a *lingua franca* in West Africa.

Map 4.2

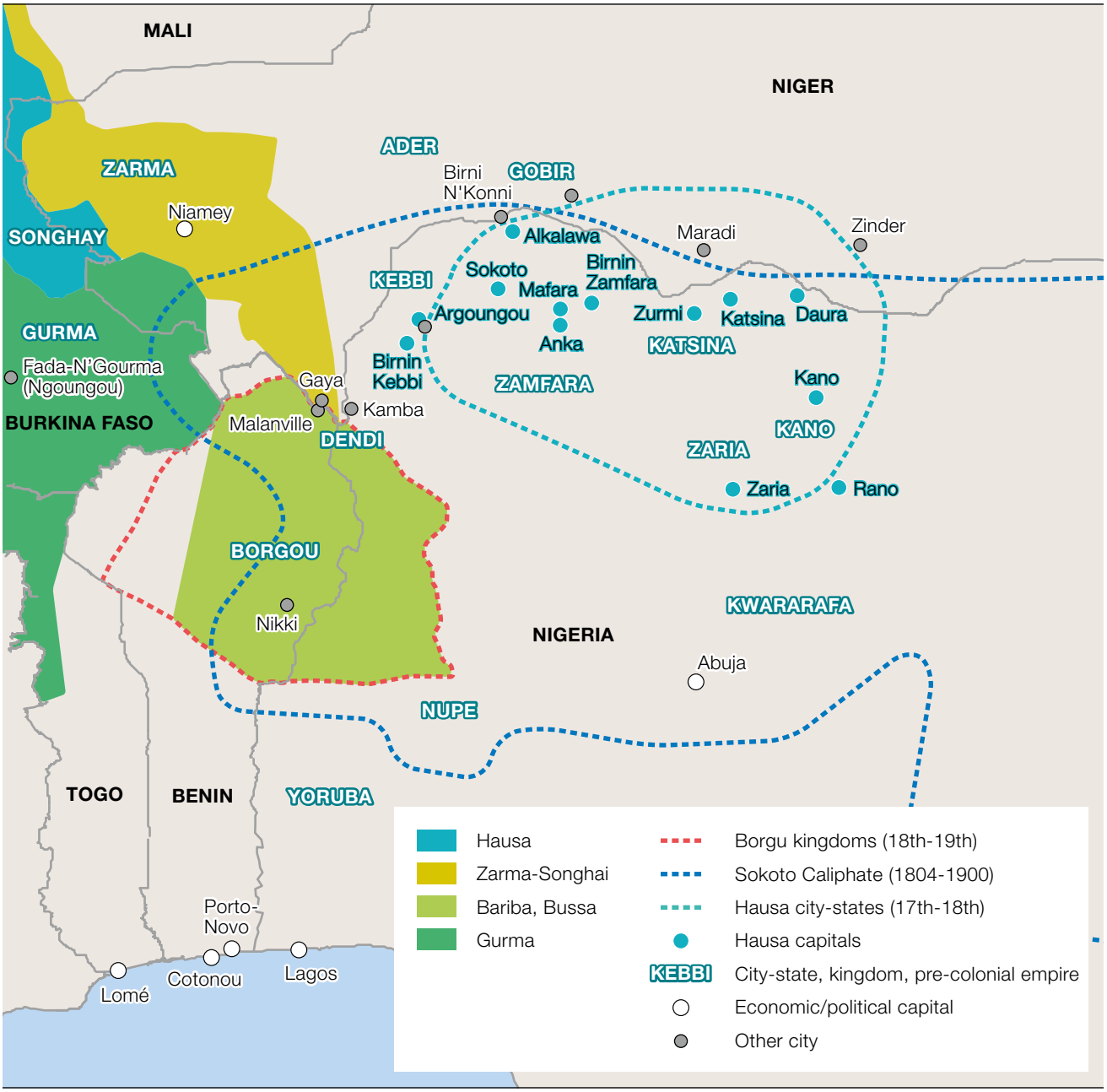
The principal ethnic groups in the Dendi and neighbouring regions



Note: West African ethnic groups often occupy the same areas, depending on the seasons and opportunities afforded by transhumance routes. The most prominent example is that of the Fulani, who occupy the region of the Niger River valley to the west of Hausa lands (the hatched area on the map).
Source: Adapted from Weidman et al. 2010

Map 4.3

Ethnic groups and precolonial political arrangements



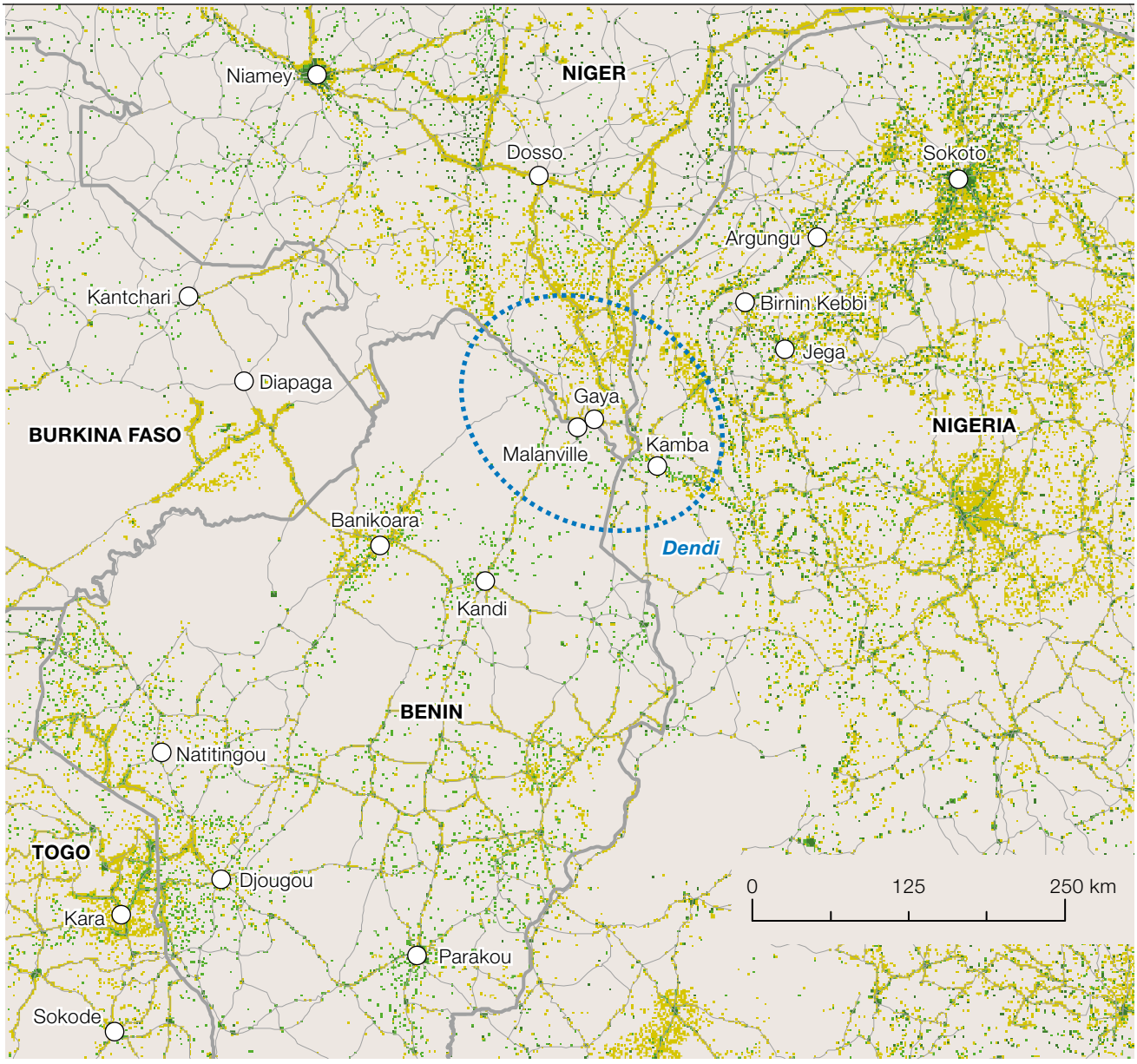
Source: Walther 2008

2012). From this perspective, the Dendi forms an ensemble of small towns and villages characterised by the political domination of Songhai groups from Gao over a landholding population devoted to traditional African religions. This region has typically maintained a marginal position relative to Sahelian political centres, such as the Sokoto Empire to the east, the Songhai Empire to the north, the Mossi Kingdoms to the west and the Borgou to the south (Map 4.3).

From a commercial perspective, the Dendi region was historically located on one of the most important precolonial caravan routes connecting Hausa city-states to the Ashanti Empire in the 19th century. Hausa merchant caravans from Kano, Sokoto and Jega stopped at Gaya before crossing the Niger River on their

Map 4.4

Population density in the Dendi and neighbouring regions, 2014



Source: OECD/SWAC 2017

journeys towards the Sansanne Mango, Yendi-Gamaji and Salaga markets where cola nuts were sold. Thanks to the fossil valleys of the Niger River, the Dendi was also a salt production centre where commerce was dominated by merchants from the region. These had such an important influence on trade that Dendi became the principal language of exchange in northern Benin and present-day Togo during the 19th century (Lovejoy, 1986).

There remains no trace of this commercial tradition in the main historical accounts of the Dendi, which instead showcase the cultivation of lands traditionally connected to the Kyanga, as well as the exercise of political power attributed to Songhai descendants (Walther, 2012). The vast

Box 4.2
The cultivation of rice in the Niger River valley

In the Niger River valley, the importance of cash crops such as irrigated rice is linked to the proximity of markets and to the distance of borders.

- The west Nigerien part of the valley is dominated by rice cultivation on the floodplain. Rice is the most profitable crop. It is exported by the tonne to Gaya and to Nigeria or sold directly from the fields to women from proximate villages, who then bring it to market. The Ouna market plays an important role in the collection and distribution of agricultural products by virtue of its antiquity, its excellent accessibility by river and its broad diversity of products.

- Agricultural activity intensifies as one approaches Gaya because access to inputs and financing for small private irrigation systems is easier. The population of Tanda own parcels of rice in the river's floodplain in Niger and in Benin. Only a minority of affluent producers sell their rice in local markets, in case of surplus, in Malanville and Kamba.

- On the Beninois bank, rice cultivation is uncommon in the areas of Karimama, in northwestern Dendi, because it is fairly distant from centres of storage and consumption situated about 35 kilometres, as the crow flies, to the east. In contrast, the downstream cash crops of Degué, Tombouctou and Molla have experienced greater growth. Rice is planted near the river or in the shallows while onions and other off-season crops are sown on the slopes of the river to take advantage of residual humidity and are intensely irrigated. Rice is delivered to Malanville by producers or collected by wholesalers.

- The perimetre of rice cultivation around Malanville has enjoyed great prosperity due to the strong demand for rice from Nigeria. Two plantings per year, from January to June and from June to October, barely respond to the Nigerian buyers' demand. The product of local rice paddies is immediately sold and exported to Nigeria where husking costs less. Nigerian exporters use canoes on the Niger River or travel by road to Sokoto, Jega, Birnin Kebbi or Argungu via Gaya and Kamba. Flows related to rice cultivation demonstrate the important role that the river valley plays as both a space of production and a principal distribution vector.

- Downstream from Malanville to the Nigerian border, soil and climate conditions physically and temporally split production. The river valley *(fadama),* more exposed to flooding, is planted with rice and the shallows *(ziggi)* sometimes separated by several kilometres from the river are more favourable to the intensive cultivation of onions, while the sandier soils are sown with rain-fed cereals (millet and sorghum). Onions are grown between October and January, after which producers stop cultivation for a period that can last until March. April marks the beginning of the planting season for rice and off-season products destined for consumption during the fallow season. Between July and September, producers grow cereal crops for harvest approximately three months later.

Source: Walther 2008

majority of merchants active in the Dendi markets today are transplants from other West African regions. The Nigerien Zarma from the Tillaberi region, the Hausa and the Ibo from Nigeria are particularly numerous among the major traders active in long-distance commerce (Koné, 2015).

The Dendi's commercial activity enjoyed spectacular development during the 1980s, driven by the liberalisation of international trade and by the ever-increasing demand for agricultural and manufactured products stimulated by urban growth. In contrast to other

Sahelian regions that were initially marginalised by colonialism, such as Zinder for instance, the Dendi's modern importance has only increased. Its strategic location on the corridor connecting Niamey to the Port of Cotonou in Benin makes it a vital crossroads for regional trade.

Among the most traded goods in the region are second-hand textiles that travel from Cotonou where they are exempt from customs and are then illegally imported into Nigeria by large economic players. Because of this commerce, the small town of Gaya has transformed in the course of only a couple of decades into a regional thrift redistribution centre. Petroleum products, plastics, cement and electronics from the Nigerian city of Kamba are also objects of brisk trade with neighbouring countries. There is also strong trade in cigarettes, second-hand vehicles and new textiles between the three countries. The Dendi also serves as a centre for the exchange of cereals, tubers, fruits and vegetables. Maize, onion and rice, in particular, are three products whose sustained demand is fueling Malanville's market activity. (Map 4.4, Box 4.2).

MAPPING CROSS-BORDER TRADE NETWORKS

Trade networks in the Dendi are analysed using a relational approach, which permits the mapping of actors involved in the rice sector. In contrast to analyses that rely on random sampling, social network analysis aims to map a group of actors as extensively as possible. Social network analysis is primarily concerned with relationships between actors in a specific sector. As such, a random sample of the population based on attributes such as age or gender, would not permit a representative enough sample to establish these relationships.

A large-scale study was required in order to identify the actors in the rice value chain and was conducted at the principal sites of production, processing and commercialisation in the Dendi by a team of geographers from the University of Niamey. These studies employed "snowball" sampling methods to establish the boundaries of the network: a first wave of interviews targeted the producers on the irrigated sites of the Niger River valley who were asked to identify the actors to whom they sell their rice. Those individuals were then interviewed in a second wave no matter where they were located in the region and no matter their role in the rice sector. Several successive waves were conducted along the same lines until all of the individuals named had already been recorded. It is, therefore, assumed that the study mapped the full extent of the commercial network in the region (Frank, 2012; Chapter 3).

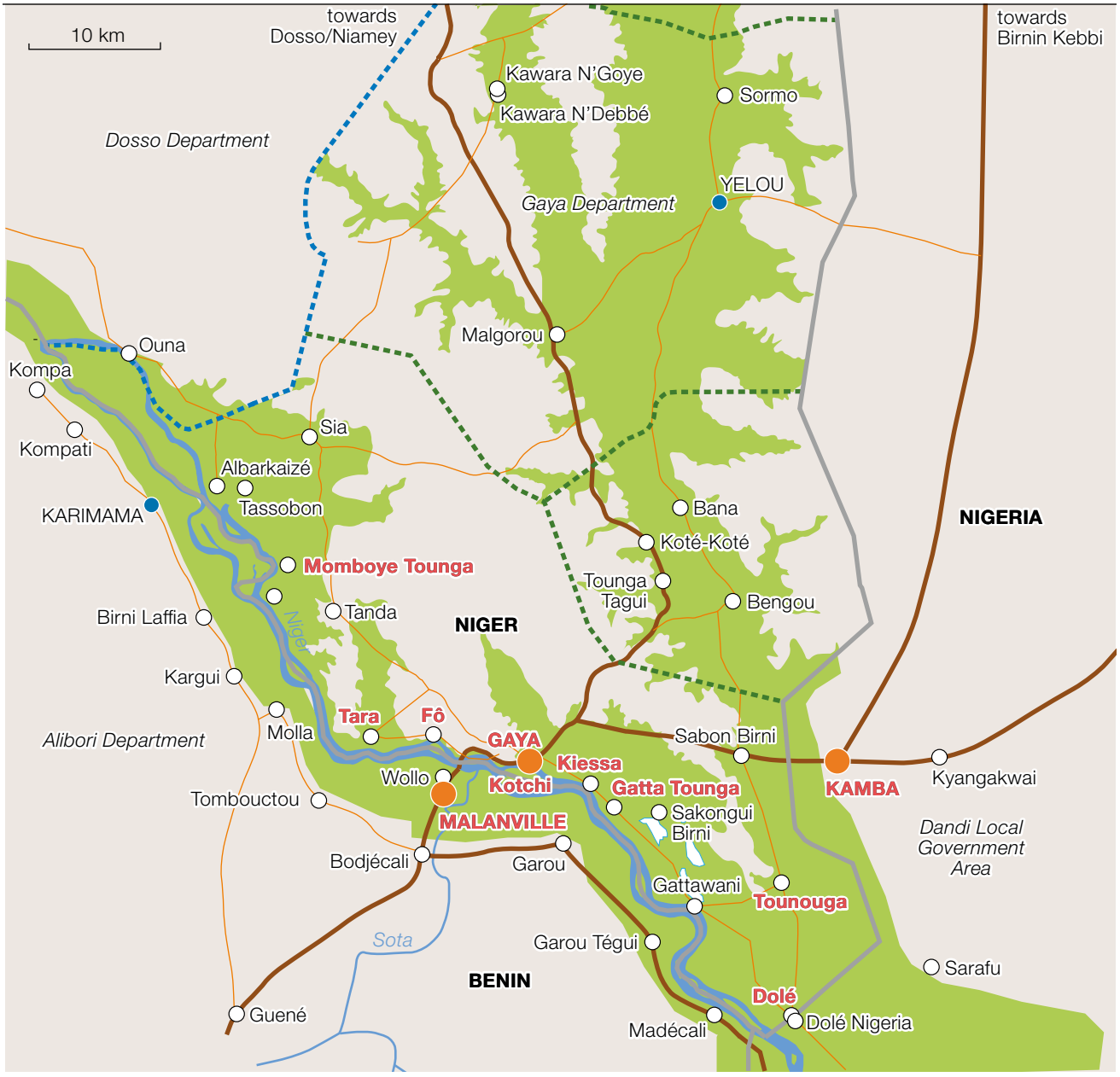
In Niger, the principal interview locations were in the communes of Gaya (Kobassi, Kiessa, Gatta Tounga, Sakongui Birni, Tara, Fo), of Tanda (Momboye Tounga, Rountoua) and of Tounouga (Tounouga and Dolé Kaïna). In Benin, interviews were concentrated in the city and commune of Malanville, which includes numerous sites of rice cultivation, including the island of Kotchi. In Nigeria, the interviews were conducted in the city and Local Government Area of Kamba, as well as in the neighbourhood of Kalambaina in Sokoto where many rice sellers that handle products from the Dendi are established (Map 4.5).

A total of 807 interviews were conducted between February and March 2018 with producers, rural intermediaries, processors, wholesalers, transporters and retailers in the Dendi rice value chain. All of the interviews were conducted face-to-face, at the place of work of the people interviewed. Mobile phone usage greatly facilitated the process of establishing contact with actors in the network ahead of the interviews. The response rate was 99%, an exceptionally high rate thanks to the methods employed by the local research teams. Two researchers from the University of Niamey and ten interviewers from the three countries were mobilised for six weeks to collect data in the first round of interviews. A second wave was conducted to identify the people mentioned during the first wave. Finally, a last wave of interviews led by two interviewers consolidated the database.

The lack of a professional registry in the area meant that the comprehensiveness of the

Map 4.5

Tri-national region of the Dendi and interview sites



Source: Adapted from Walther (2008) and Dambo (2007)

database cannot be verified against official records. In each production area an effort was made, however, to co-ordinate with local administrative and customs authorities to identify all known rice producers. Consequently, the study can be considered as an exhaustive outline of the local production network even if certain actors active in other segments of the value chain may have been missed, especially in urban areas. In Malanville or Sokoto, for example, only merchants selling rice from the Dendi were interviewed, and not the entire population of wholesalers and retailers that work with this grain.

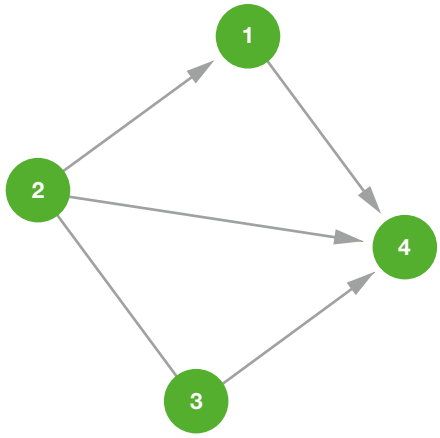
Once the data was collected, the names of actors on the questionnaires were standardised so that homonyms could be distinguished from each other. This step was crucial in order to be able to identify each actor and their commercial partners. In the Dendi, it is common to encounter people with similar names and surnames (Abdoul Moumouni or Moumouni Abdoul) or who have several surnames (Abdou dit Petit, Awa dite Kaïna). This operation was accomplished by constructing a matrix containing, in rows and columns, the names of all the peoples interviewed and their commercial partners from one end to the other of the rice value chain. Each connection was coded with a "1" if one person sold rice to the other and a "0" otherwise. All proper names were replaced with numbers in order to preserve the anonymity of interviewees.

The matrix was then transformed into a social network where the nodes represent the individuals in the rice value chain and the links their business relationships. The network is directed to the extent that the direction of links, from seller to buyer, is known. Figure 4.6 shows a network of non-symmetrical relationships between individuals: if actors 1, 2 and 3 sell rice to actor 4, the latter is not necessarily the seller of the same product.

Once the social network is mapped using ORA NetScenes (Carley, 2016) software, it is possible to measure the structural importance of each actor (their centrality) relative to others, identify the most central actors, measure the position of women within the network relative to men, and map the spatial extent of the network in the region.

Figure 4.6
The interpretation of a network matrix

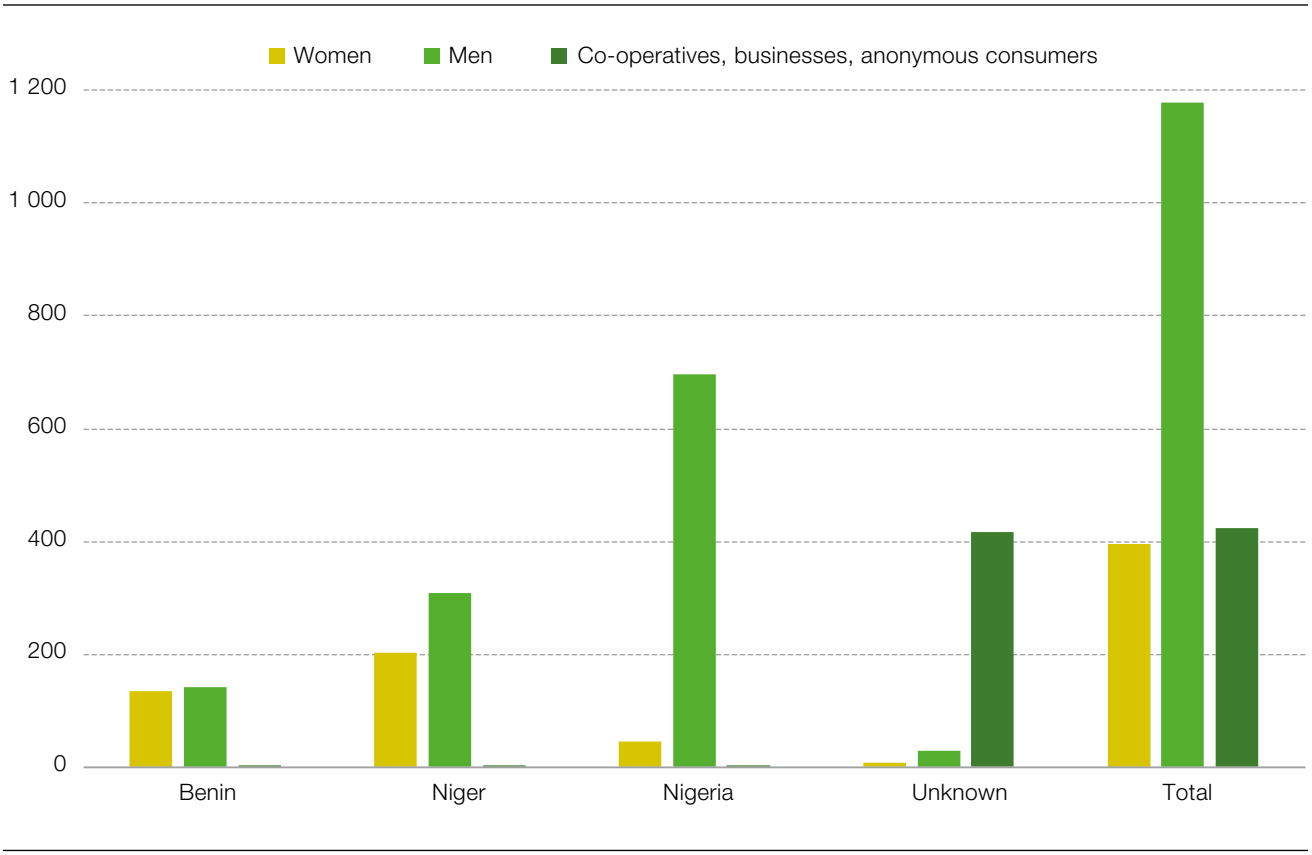
	Actor 1	Actor 2	Actor 3	Actor 4
Actor 1	0	0	0	1
Actor 2	1	0	1	1
Actor 3	0	0	0	1
Actor 4	0	0	0	0



The 807 interviews conducted in the region yielded 1997 actors, from which 1574 were identified by name, 416 were anonymous consumers and 7 were enterprises or co-operatives. There were over 2.5 potential connections between individuals, which makes it the largest network ever mapped in sub-Saharan Africa. Of the 1574 individuals, men represented 75% of the total (1180 people) and women 25% (394). Close to half of the people lived in Niger (46%), one-third in Nigeria (32%), and one-fifth in Benin (19%). The proportions differed substantially by gender: women were better represented in Benin (48%) and in Niger (40%) than in Nigeria (6%). The proportion of people from countries not adjoining the Niger River (Burkina Faso, Togo) was negligible regardless of gender (Figure 4.7).

Men and women occupy substantially different roles in the rice value chain (Figure 4.8). Women are clearly less well-represented in

Figure 4.7
Population by gender and country of residence, 2018



Note: People who declared their country of residence as Burkina Faso, Ghana or Togo were only included in the total population figure.

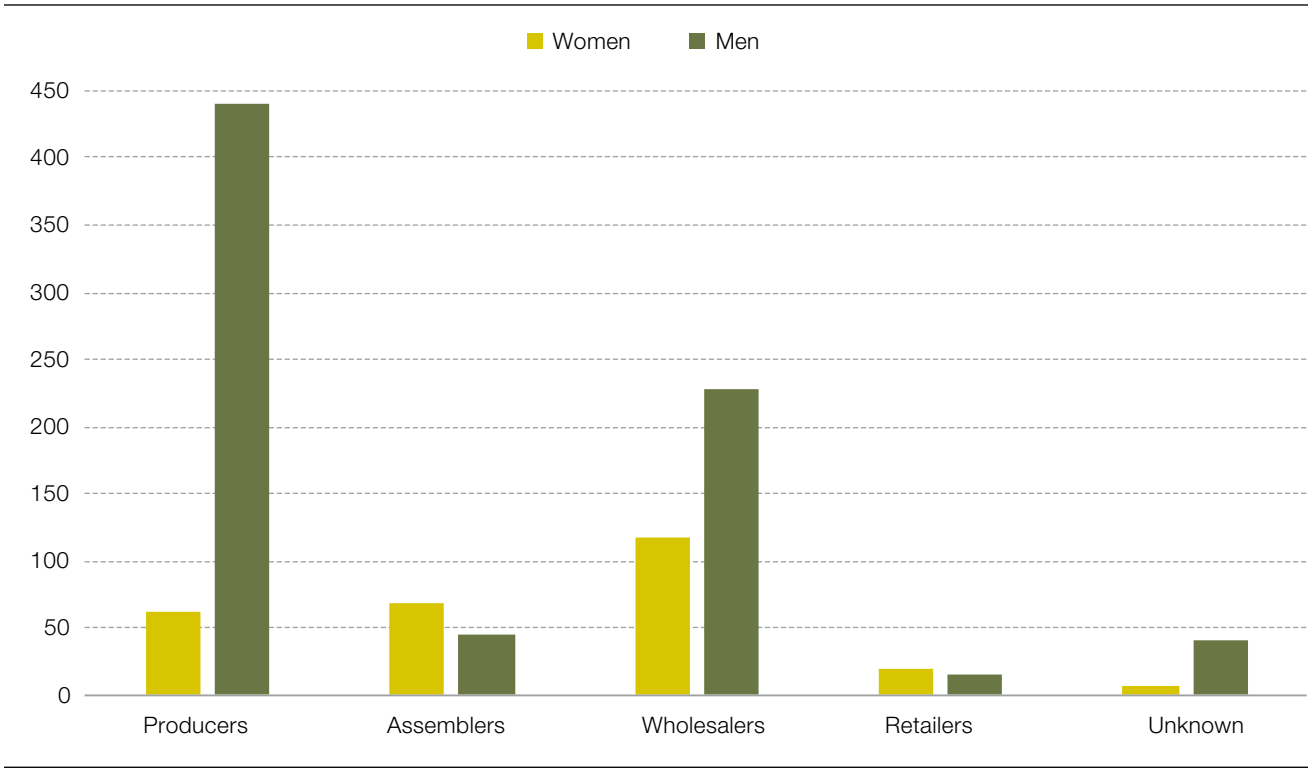
production (13%) and wholesale (34%). By contrast, they are proportionally more numerous in rural intermediary activities related to the husking and processing of rice, resale to urban wholesalers (60%) or in retail (56%).

In addition to the relational analysis, a series of attribute data was collected, such as age, gender, nationality, ethnic group, religion, marital status, number of children, revenue, most frequently sold products, enterprise size and level of education. Particular attention was paid to spatial data, like area of residence, which allowed the researchers to map the trade network and measure its cross-border reach. Google Maps was used to search for the co-ordinates of 160 different residence locations mentioned by actors in six countries (Benin, Burkina Faso, Ghana, Niger, Nigeria and Togo).

GENDER IS THE MOST DISCRIMINATORY VARIABLE IN THE RICE VALUE CHAIN

The structure and function of a commercial network like that of rice in the Dendi cannot be studied without reference to the socio-demographic characteristics of actors that make up the network. Studying the professional profile of the actors within it reveals that no variable is more discriminatory than gender in the rice value chain. Men are more experienced, make significantly more money and have disproportionately higher levels of education than women. While Nigerian entrepreneurs are more highly educated and richer than others, the disparities between men and women are much greater than those between countries.

Figure 4.8
Actors by role and gender in the rice value chain, 2018



In the domains related directly to professional activities, the difference is such that men and women form two populations with opposite characteristics.

Actors with high experience but low education

Actors in the sector are adults with long experience working in rice cultivation and trade, acquired over the course of long apprenticeships (Table 4.1). Aged on average between 40 and 41 depending on the country, they have worked in the production or commercialisation independently for 15 years after having learned their trade over the course of 8 years in family or other businesses. It is in Nigeria that actors have the longest experience (17 years) while in Benin they spend the most time in apprenticeships (9 years). The Dendi has numerous entrepreneurs who come from other regions of Benin, Niger and Nigeria, attracted by agricultural and commercial opportunities in the region. This strong mobility is confirmed by the fact that actors in the network have only been established in their current home for an average of ten years.

The annual earnings of actors in the rice network is around EUR 1600. It is more than 2.5 times higher in Nigeria (USD 2460) as in Benin (USD 948) and more than three times larger than in Niger (EUR 864). These figures are notably larger than the average revenue in each country, estimated at EUR 2148 in Nigeria, EUR 719 in Benin and EUR 324 in Niger in 2016 (World Bank, 2018a). With five employees or more, the size of Nigerian firms in the network is much larger than those of neighbouring countries. Already noted in the course of studies of small businesses in the region (Kuépié et al., 2015), these disparities reflect differences in levels of development between Nigeria and its neighbours. Other than the fact that it has a market and a population vastly larger than in Niger and Benin, Nigeria is also better endowed with road and commercial infrastructure. Nigerian merchants have access to a much larger base of consumers, financial

Table 4.1
Socio-demographic characteristics of interviewees

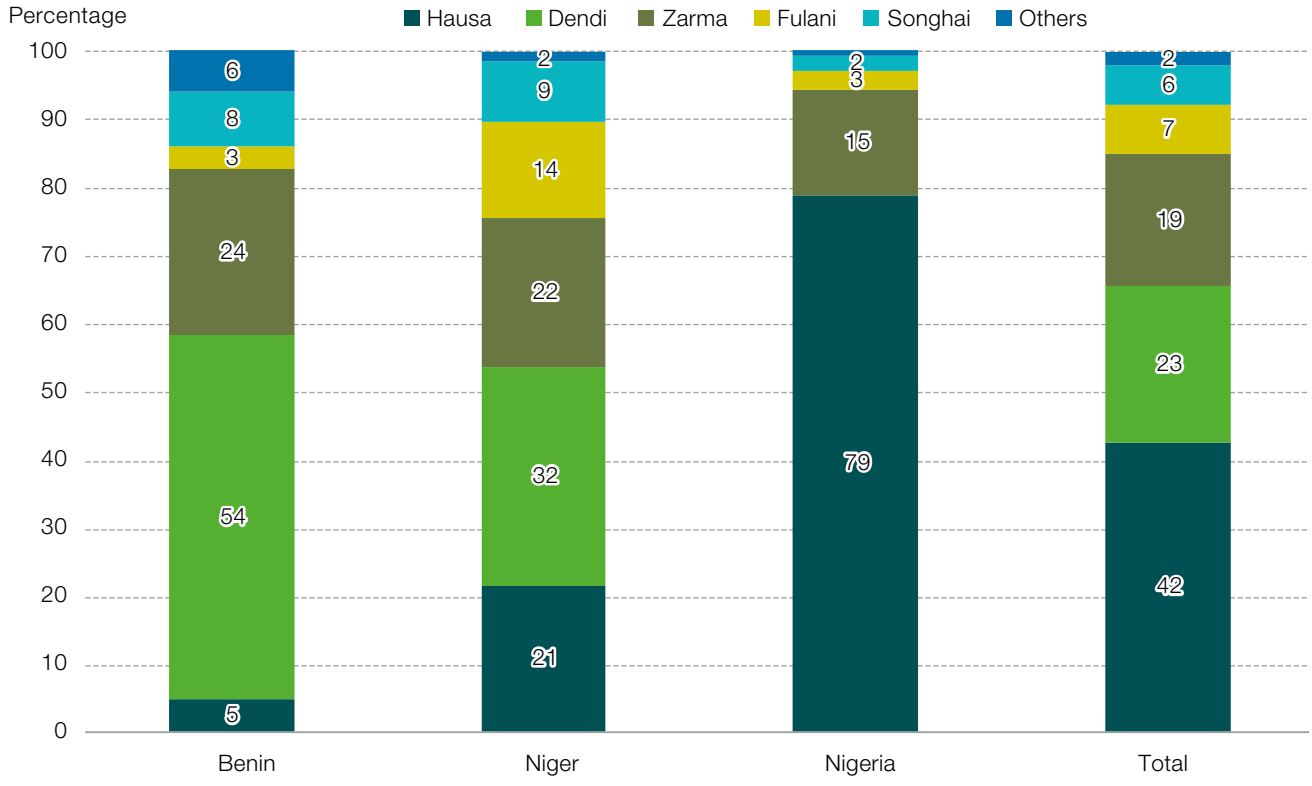
	Benin	Niger	Nigeria	Total
Population	173	275	359	807
Gender (percentage)	21.4	34.1	44.5	100.0
Women	59.0	59.0	0.6	33.0
Men	41.0	41.0	99.4	67.0
Number of children	5.5	6.2	7.2	6.5
Experience (years)				
Age	40.1	41.2	40.9	40.8
Apprenticeship	9.4	7.2	6.9	7.5
Independent activity	15.1	12.6	17.0	15.1
Years in current home	9.5	11.6	10.5	10.7
Business				
Annual profit (in EUR)	948	864	2 460	1 596
Number of employees	3.6	3.5	5.1	4.2
Religion (percentage)				
Muslim	98.3	99.3	99.2	99.0
Christian	1.7	0.7	0.8	1.0
Marital status (percentage)				
Single	5.8	1.5	3.6	3.3
Married	88.4	94.9	95.9	93.9
Widowed	5.2	3.7	0.6	2.6
Divorced	0.6	0.0	0.0	0.1

services and transportation options than in the south of Niger or north of Benin.

The near-totality of people interviewed were Muslim, including those in the north of Benin (98%) where the proportion of Christians and followers of traditional religions is slightly higher than in Niger or the north of Nigeria. In a region that values large families and polygamy, divorce and single people are rare and, consequently, a large majority of producers and traders are married (94%).

More than 4 out of 10 people interviewed (42%) identify most closely to the Hausa ethnic group (Figure 4.9). This proportion reaches 79% in the Nigerian part of the Dendi where Hausa traders have been well known, since the pre-colonial period, for their business acumen in short- and long-distance trading and for their adeptness at constructing merchant diasporas in West Africa. Thanks to the extent of their networks, they dominate the rice trade network by buying the peasant's harvests and

Figure 4.9
With which ethnic group do you identify most closely?



amassing stocks of rice in small and mid-sized villages in the Dendi before expediting them to Nigeria.

One-quarter of those interviewed in the network claim Dendi backgrounds. This ethno-linguistic group is particularly prominent in Benin (54%) and secondarily in Niger (32%). The Dendi people are more numerous in agricultural activities linked to rice, a domain in which they invest more heavily than commerce. The opposite is the case amongst the Zarma of the region, who represent a little less than one-fifth of actors (19%). The opportunities of the Dendi border region have, since the 1980s, attracted numerous Zarma from other regions of Niger (Tillaberi, Dosso), where they became implicated in commercial activities. The Fulani represent only 7% of the population surveyed and the Songhai 6%. Representation of other ethnicities is marginal (less than 2%).

Actors in the rice value chain are generally poorly educated. Across the region, close to one-third of people interviewed had no education, which was approximately one-half of the population surveyed in Niger and Benin (Figure 4.10). Koranic school is the most frequently attended on average (42%), particularly in the Nigerian part of the Dendi (53%) where Islamic education has been more widely adopted. Less than one-third (31%) of actors in rice have a formal education. In Benin and Niger, those that are educated tend to have only attended primary school (19% and 12%, respectively). In these two countries, however, the proportion of actors with primary education is smaller than the total number of literate adults over the age of 15, which reached 33% in Benin and 15% in Niger (World Bank, 2018b). The proportion of secondary (18%) and tertiary (7%) graduates is higher in the Nigerian part of the region although levels are not comparable to the south of that country.

Table 4.2
Socio-demographic characteristics of interviewees by gender, 2018

	Women	Men
Number of children	5.1	7.1
Experience (years)		
Age	40.3	41.1
Apprenticeship	6.0	8.3
Independent activity	12.8	16.2
Years in current home	12.1	9.9
Business		
Annual profit (in EUR)	456	2 172
Number of employees	2.7	5.0
Religion (percentage)		
Muslim	99.6	98.7
Christian	0.4	1.3
Marital status (percentage)		
Single	0.4	4.8
Married	92.5	94.6
Widowed	6.8	0.6
Divorced	0.4	0.0

Large professional differences between men and women

To what extent do these results vary by gender? Women represent one-third (33%) of people interviewed for which detailed socio-demographic data is available (Table 4.2). This proportion is slightly higher than the total of the network (25%) due to the methodology used. The "snowball" methodology, which involves asking interviewees to name people with which they do business, yields higher numbers of people than can be interviewed. In the Dendi, for instance, 1 997 people belong to the network, but only 807 were interviewed. As a result, socio-demographic information is more detailed for those interviewed than those that were mentioned but not contacted, for whom only the name, gender, economic role and place of residence are known.

The number of women interviewed was higher in Benin and Niger (59%), where they are particularly active in the production of rice. In Nigeria, by contrast, women were less likely to frequent markets due to Islamic norms that constrain them to their homes. This also reflects a certain division of labour in the Dendi network: women are more numerous in production activities on the Beninois and Nigerien side of the Niger River than in wholesale destined to Nigeria, a country in which the rice market seems to be completely dominated by men.

It is in professional experience, education and revenues that the differences between men and women are most pronounced. Although the two sexes have a similar average age, men spend more time in their apprenticeships and are active in the rice value chain for longer than women (16 versus 13 years). These differences are likely to create disparities in producer's returns and seller's profits and their access to capital. The number of years that men reported being at their current location of residence is also shorter, which suggests that they have more mobility than their women counterparts.

Men and women have diametrically opposite educational attainment (Figure 4.11). Almost 65% of women interviewed had no education, compared to only 8% of men. The latter are considerably more likely to have attended Koranic schools (52%) than women (17%). Among actors in the network that have primary education, only 19% are women. This percentage decreases as levels of education increase: women represent only 12% of people with a secondary diploma and only 4% of those that attended post-secondary institutions.

Women's disadvantage in terms of professional experience, education and revenues likely reinforces gender inequalities all through their professional lives and translate generally into less access to financial services, less social and spatial mobility and, ultimately, lower incomes than men. Research in the Dendi confirms this pattern: the average annual income of men (EUR 2 172) is close to five times larger than that of women (EUR 456). These findings are

Figure 4.10
What is your highest level of education?

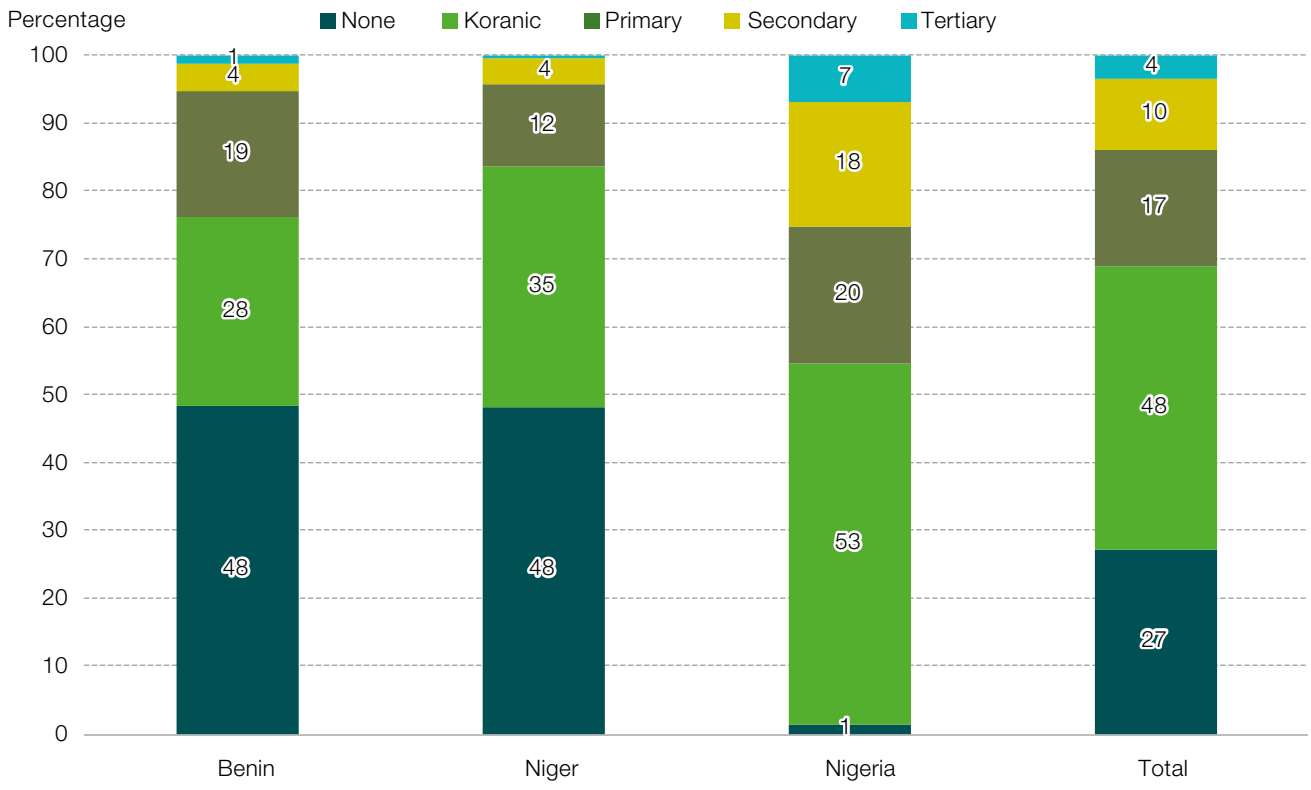


Figure 4.11
Level of education of rice network actors by gender, 2018

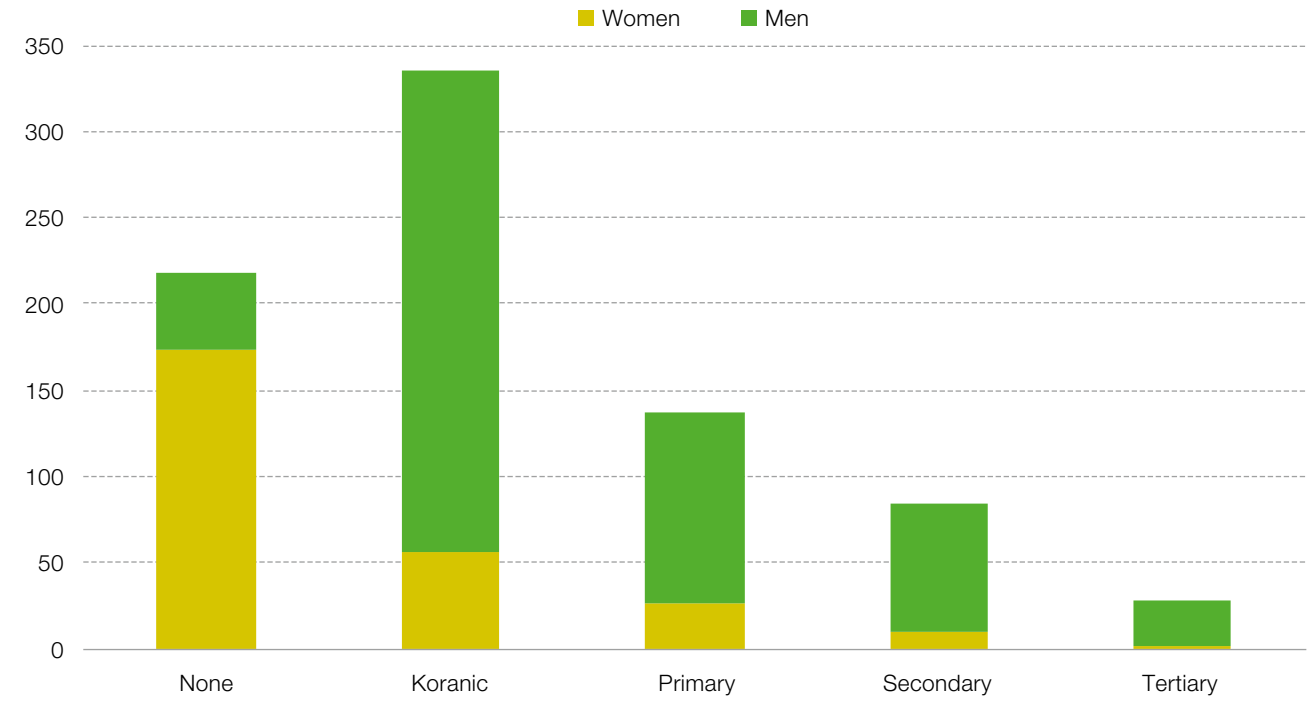
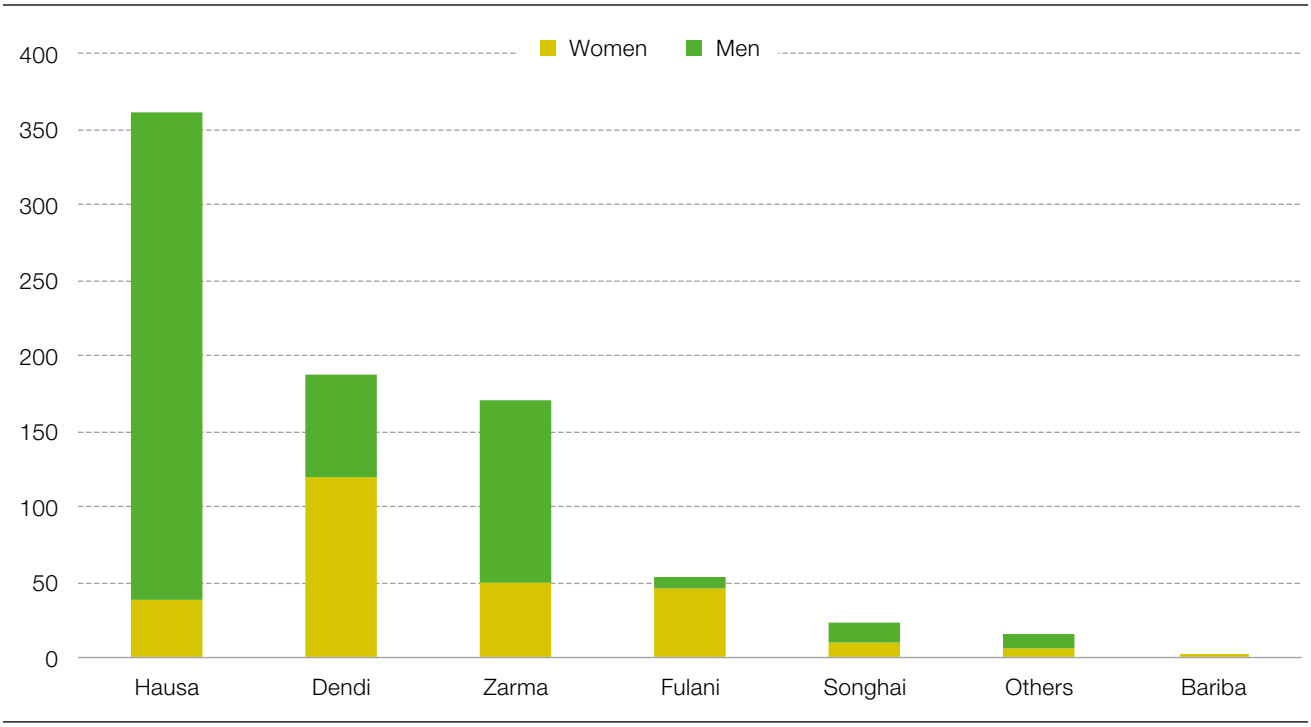


Figure 4.12
Ethnic origin of rice network actors by gender, 2018



even valid if other factors are held constant: given equal levels of education and professional experience, women's revenues are significantly lower than men in the region (Walther et al., 2019). With an average of 5 employees, the size of firms led by men is more than double that of women (2.7).

In religious and marital domains there are no significant differences. As a result of the widespread practice of polygamy, the number of children that men have is obviously higher than for women. Women are proportionally more numerous in claiming Bariba, Fulani and Dendi ethnic backgrounds than men (Figure 4.12). Conversely, the men interviewed were significantly more likely to claim Zarma and Hausa origins. The case of Fulani women should be highlighted, to the extent that this ethnic group is often present in pastoral versus agricultural activities. In certain hamlets in the Momboye Tounga region in Niger, numerous women have turned to commercialising rice originating in the Niger River valley.

Socio-demographic disparities influence, without determining, the general architecture of the rice network in the region, as the following section focused on the functional role of actors in the sector, demonstrates.

THE PLACE OF WOMEN IN THE NETWORK

Women occupy a peripheral place in the Dendi rice network. This analysis confirms that they have fewer commercial partners, are less likely to construct links between business communities and are less well-connected to other central actors than men. This situation is due, notably, to the fact that the most favourable structural positions in networks like that of rice are monopolised by powerful male intermediaries from Nigerian markets.

The role of women in the Dendi rice network depends as much on the general architecture of the commercial network – topology in the specialised language of network analysis – as on the structural position of each actor in the social structure. These two factors determine

Table 4.3
Characteristics of provincial and cosmopolitan social networks

Measure	Definition	Strongly embedded network (provincial)	Network with many intermediaries (cosmopolitan)
Density	Percentage of existing ties in the network compared to potential links	High	Weak
Average degree	Number of ties per actor	High	Weak
Agglomeration co-efficient	Tendancy to form a network from a single component	High	Weak
Average path length	Number of separations between the actors of the network	Weak	High

Source: Everton 2012

in large part the constraints that exist on the autonomy of women in business. Women's activities are as limited by the general structure of business relations, which impose an unequal division of labour based on gender, as they are by the relations that each local entrepreneur has with their trading partners.

A sparse and decentralised social network

The Dendi rice business network has a sparse and decentralised structure within which actors are extremely far apart. It allows large numbers of actors to co-ordinate activities that are functionally quite different from one end of the value chain to the other over considerable distances.

These characteristics stem from arbitrage, within the network, between two different types of centrality: embeddedness and brokerage. Embeddedness stems from trust between friends, parents or commercial partners and reduces risks associated with social, political and economic activities. Highly embedded actors occupy very central positions, surrounded by other actors with which they interact frequently to exchange information, raise resources or transmit instructions or reputation. Brokerage, by contrast, offers access to resources or information that are not available locally. Brokers that manage to build bridges between their communities and the rest of the network increase their social networks in three ways (Spiro et al., 2013). They can transfer resources between two disconnected parties, facilitate the connection of two actors to mutual benefit, or co-ordinate the activities of others without creating direct connections between them, reinforcing their dependence on the broker (see OECD/SWAC, 2017).

A network that contains numerous highly embedded actors is termed "provincial" to the extent that actors have lots of linkages and form close-knit communities through parentage, business and friendship (see Chapter 3). The density, average number of links and the agglomeration co-efficient are high in this kind of structure where actors are close to one another (Table 4.3). A network that contains numerous brokers is called "cosmopolitan" in reference to the fact that actors tend to make links between several distinct communities. It results from the opposite forces than are at play in provincial networks: the density, the average number of links and the agglomeration co-efficient are all weaker in cosmopolitan networks, while a lot of steps are required to link one actor to all others.

The analysis shows that the Dendi rice network corresponds perfectly to a "cosmopolitan" structure in which most social actors favour brokerage over embeddedness. The network consists of 1 997 actors linked by 2 155 business relationships, which means that only 0.05% of potentially existing ties are actually

Table 4.4
Principal indicators of embeddedness and brokerage

Measure	Value
Number of nodes	1 997
Number of ties	2 155
Density	0.005%
Average degree	2.6
Average path length	8.0
Agglomeration co-efficient	0.001

present in the network. This very low density is not surprising. On the one hand, the density of a network tends to decrease with its size because of the impossibility of maintaining a very large number of social relations simultaneously (Valente, 2010). It is also easier to be connected to everyone in a very small network where everyone knows each other than in a large structure where people can be separated by social, linguistic or geographical barriers. On the other hand, the uncertainties that weigh on commercial activity in the region and the weakness of the formal institutions responsible for guaranteeing contracts, encourage West African merchants to maintain a small number of commercial partners with whom they establish relationships with each other over time (Fafchamps, 2004).

In the rice network, each actor has an average of 2.6 commercial relationships (Table 4.4), a value comparable to the large international traders interviewed in the Dendi at the beginning of the 2010s (Walther, 2015). The average number of steps required to link an actor from any point in the network is relatively high (8.0), which is not surprising given that this is an agricultural network that connects producers and consumers often separated by hundreds of kilometres. An elevated number of steps is also a sign that the agricultural network has not been the subject of significant integration, as in industrial economies, where the number of intermediaries is noticeably smaller (Allen and Heinrigs, 2016). Finally, the rice network has a more compact structure; the agglomeration co-efficient, which indicates whether actors form small closed communities, is quite weak.

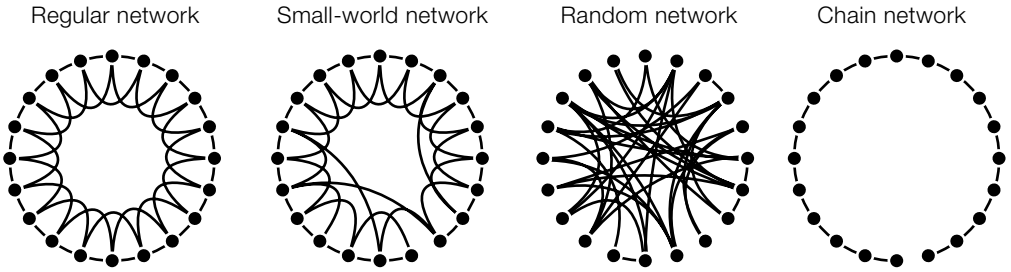
The combination of a weak agglomeration co-efficient and long distances between actors is typical of chain networks (Figure 4.13). As previous studies on cross-border co-operation networks in West Africa have noted (OECD/SWAC, 2017), this structure differs both from regular networks where path length and agglomeration are high, from small-world networks where all actors can be reached in few steps and from random networks where the two measures considered here are both weak.

These results do not necessarily mean that the rice network is fragmented into multiple subgroups lacking ties to one another. Only 67 pairs of actors (dyads) and 48 groups of three actors (triads) are disconnected from the principal component of the network, which represents only 14% of actors. This is a remarkable finding considering that the network consists of actors spread across three main countries (Figure 4.14).

Another way to study the architecture of the Dendi rice network is to explore its degree of centralisation, which indicates whether the structure is more or less centralised according to various measures. Very centralised networks are built around certain very well-connected actors, who possess, for example, numerous links (degree), are capable of playing an intermediary role (betweenness), are very close to the centre of the network (closeness) or are well-connected to other central actors (eigenvector). By contrast, decentralised networks have few exceptionally well-connected actors and their measures of centralisation are generally weak (Table 4.5).

The Dendi rice network has few actors with exceptionally high centrality, as shown by the centralisation measures presented in Table 4.6, which determine the degree of inequality in the network. These figures vary between "0", a situation where no actor is more central than another, and "1", a situation where a single actor's centralisation is greater than every other actor, such as when an individual occupies the centre of a star network. The weak degree centralisation (0.002) indicates that the number of business relationships does not vary substantially among

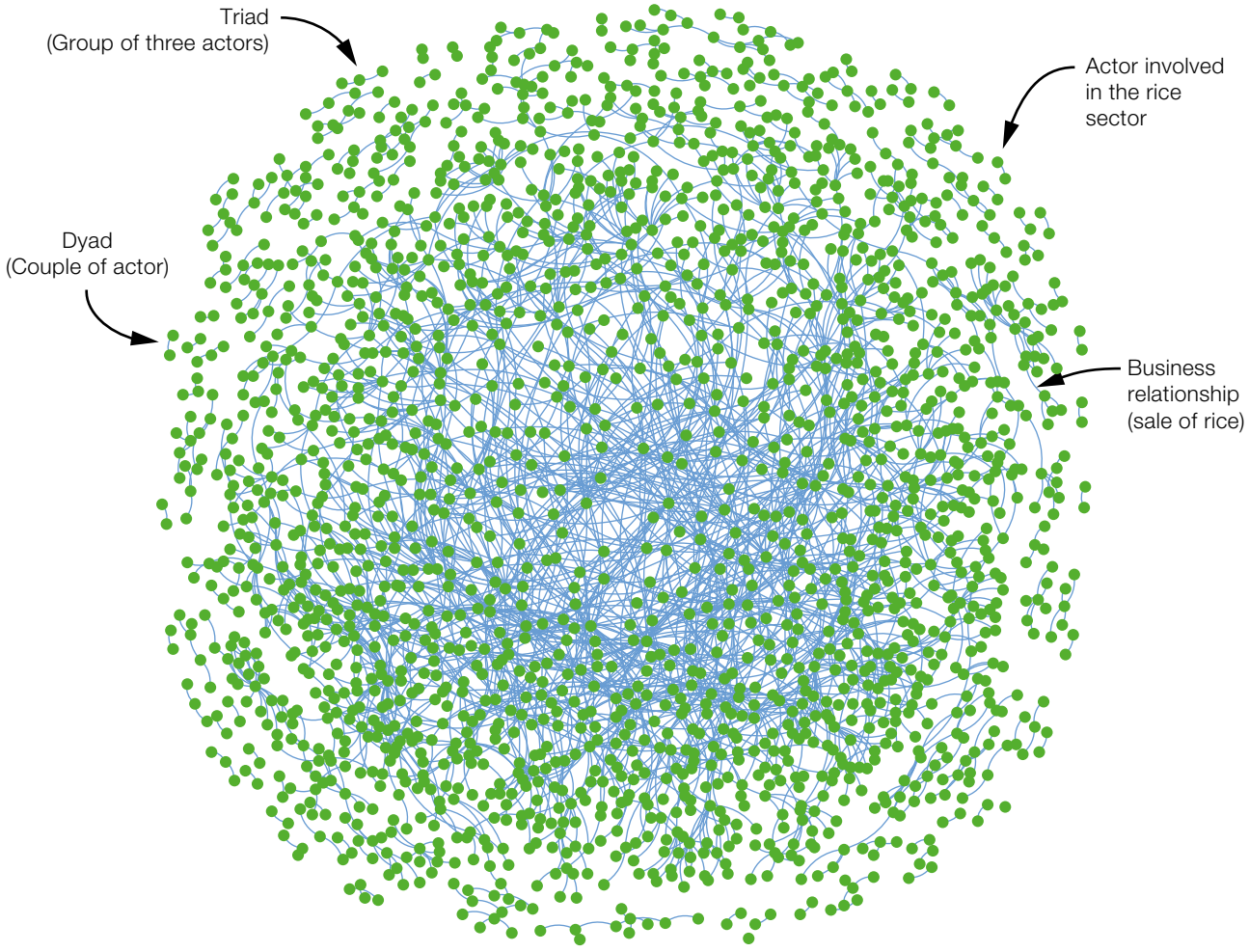
Figure 4.13
Topology of networks by path length and agglomeration co-efficient



Average path length	High	Weak	Weak	High
Agglomeration co-efficient	High	High	Weak	Weak

Source: Adapted from Watts and Strogatz 1998

Figure 4.14
Rice commercialisation network in the Dendi, 2018



Note: To improve legibility, the direction of relationships is not indicated.

Table 4.5
Characteristics of centralised and decentralised networks

Measure	Definition	Centralised network	Decentralised network
Degree centralisation	Presence of actors with an exceptional number of ties	High	Weak
Betweenness centralisation	Presence of actors connecting sub-parts of the network	High	Weak
Closeness centralisation	Presence of actors close to the centre of the network	High	Weak
Eigenvector centralisation	Presence of actors well-connected to the most central actors	High	Weak

Source: Everton 2012

the population interviewed. The weak closeness centralisation (0.0001) reflects the fact that the chain structure of the network means that actors are distant from one another and makes it impossible to identify a unique centre. The weak betweenness centralisation (0.005) indicates that no one broker is particularly central. Eigenvector centralisation is relatively high (0.329), which suggests that some actors are well-connected to other central actors despite the limited number of connections.

Women are less central than men in the network

Gender is the variable that most strongly determines the social relations within the rice value chain. Men and women occupy different segments of the chain, as shown by Figure 4.15 in which actors are represented by gender. The large number of actors and relationships makes it difficult to grasp the exact role of each and the constraints imposed on them by the structure of the network. For that, it is necessary to show men and women separately as in Figure 4.16. In such a depiction, gender disparities become more evident: while men have a relatively compact network of business relationships with other men, relationships between women are particularly rare. In other words, although women participate in the rice business in the Niger River valley, their commercial partners are almost always male.

Table 4.6
Principal indicators of the rice trade network

Measures	Value
Number of nodes	1 997
Number of ties	2 155
Degree centralisation	0.0020
Closeness centralisation	0.0001
Eigenvector centralisation	0.3290
Betweenness centralisation	0.0050

This segmentation of the rice market according to gender can be studied using the concept of homophily, which presumes that social actors tend to privilege social relationships with other actors that share common attributes, such as nationality or language. In other words, as the saying goes, "birds of a feather flock together" (McPherson et al., 2001). Applied to the rice network, this property means that a homophilous network possesses more relationships between men or between women than a heterophilous network, where intersex relationships dominate.

The rice network has a relatively elevated homophily score for men and a low one for women: Close to 77% of men indicated they had a male business partner while only 22% of women indicate they trade with women (Table 4.7). These particularities are

Table 4.7
Homophily of actors in the rice network by gender, 2018

Genre	Homophily Percentage of ties maintained with the same sex	E/I Index Tendency to trade with someone of the opposite sex (varies from +1 to -1)	Interpretation
Women	21.5	0.570	Women trade mostly with men
Men	76.9	-0.538	Men trade mostly with men
Entire network	64.3	-0.289	Women and men have different business relationships

corroborated by the E/I index that measures the relationship between external relationships (E) and internal relationships (I) of each gender, divided by the total number of relationships in the network [(EL-IL)/(EL+IL)]. The index ranges between +1 and -1. A high positive index signifies a very heterophilous network where women and men do business with members of the opposite sex. That is the case with women in the rice network. Values near zero indicate that actors do not have a preference and, as a result, the variable chosen to create groups within the network has little explanatory power. By contrast, a high negative index indicates that men and women prefer to do business with members of the same sex. This type of homophily is observed for men in the Dendi. To the extent that men and women have different types of relationships and there are more relationships between men, the network as a whole has a slightly negative index.

The asymmetry between men and women in this rice network does not explain, by itself, the structurally peripheral role that women occupy in the network. To understand this, the position of every man and every woman in the network relative to one another must be taken into consideration. This differential *centrality* tells us about the structural importance of a node in the network and explains the unfavourable relations that women have in this particular value chain. The challenge for social network analysis is to determine to what extent the place occupied by an actor can be transformed into an advantage or can play against them. All of the measures used here to discuss different types of actor centrality show that the centrality of women is weaker than men in the Dendi.

This is the case for degree centrality, which simply measures the number of business relationships that actors have within a network. Women have an average of 2.5 partnerships in the network compared to 2.9 for men (Figure 4.17). To the extent that rice is a commercial network, this measure can be disaggregated into inward ties (in-degree) and outward ties (out-degree). Actors that have a high in-degree centrality tend to buy rice while those with a high out-degree centrality tend to sell rice. The higher number of women buying rice to resell to retailers explains why the in-degree centrality of women (1.5) is slightly higher to that of men (1.4).

If it is beneficial to have numerous partners to be successful in business, it is also crucial to be connected to partners that are themselves well-connected. Eigenvector centrality addresses this as a measure that, unlike degree centrality, takes into account not only immediate links but the centrality of each of the partners with whom men and women are connected. Here too, the centrality of women in the network (0.03) is weaker than their male counterparts (0.05), which indicates that women are much less well-connected to central actors than men (Figure 4.18).

Women are also less well-positioned as brokers in the network. Their betweenness centrality, which indicates whether they are in the path between two actors that are not directly connected with each other, is considerably lower (97) than men (169). In an agricultural network like that of rice where most of the value

Figure 4.15

Business relationships by gender in the rice network, 2018

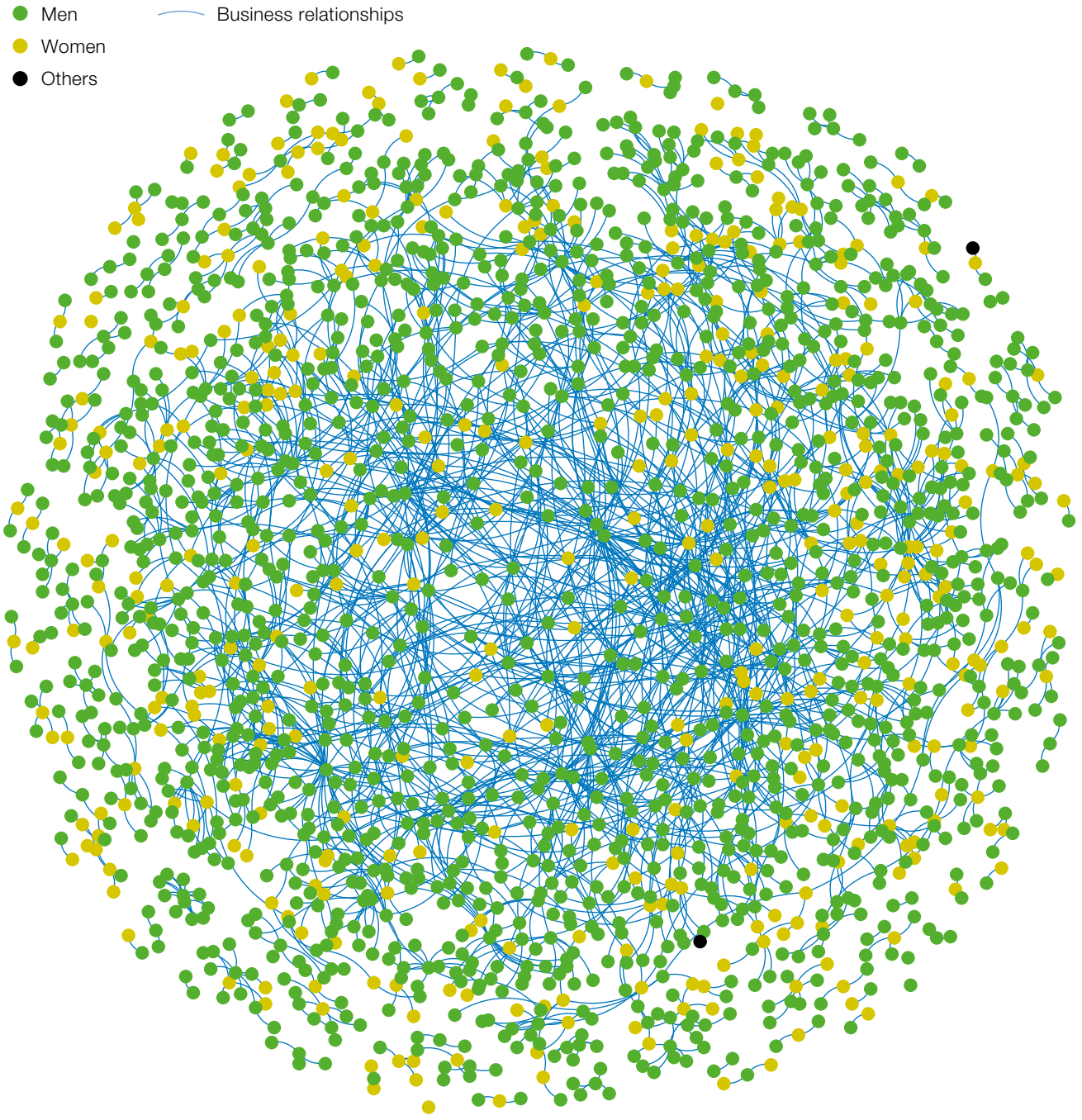


Figure 4.16
Business relationships between women and between men, 2018



Figure 4.17
Degree centrality by gender, 2018

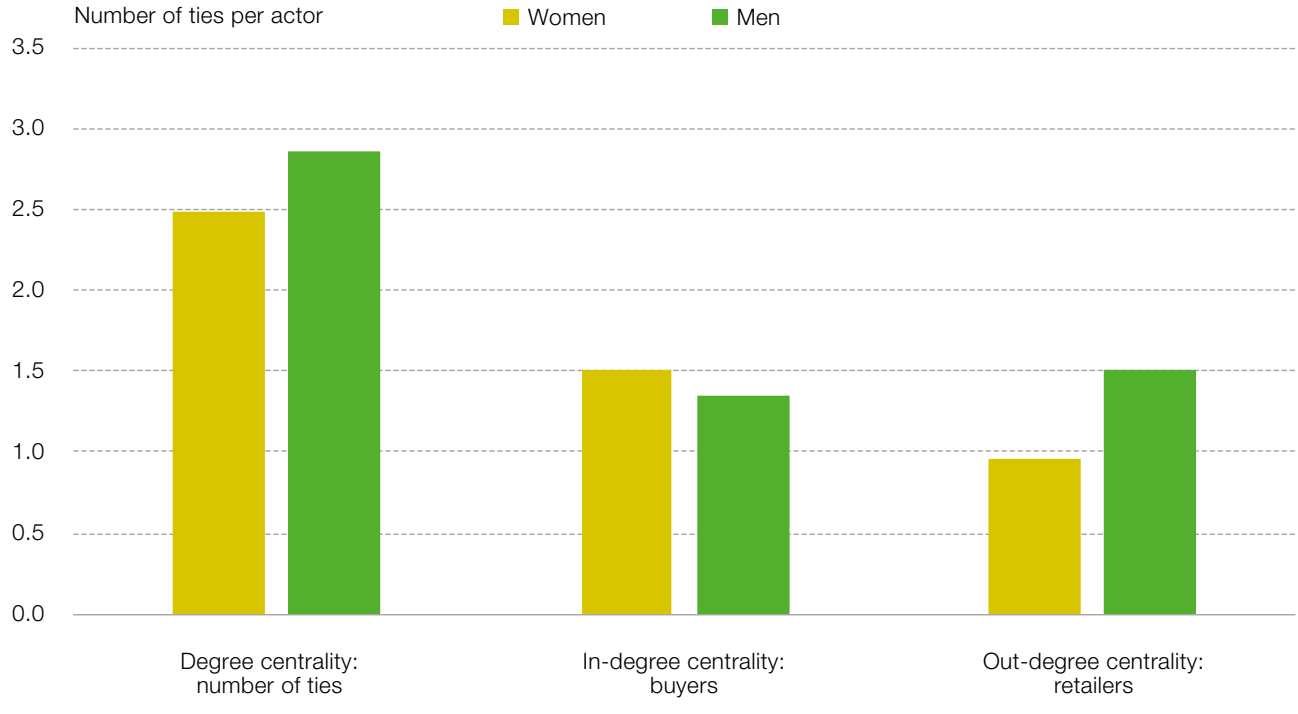
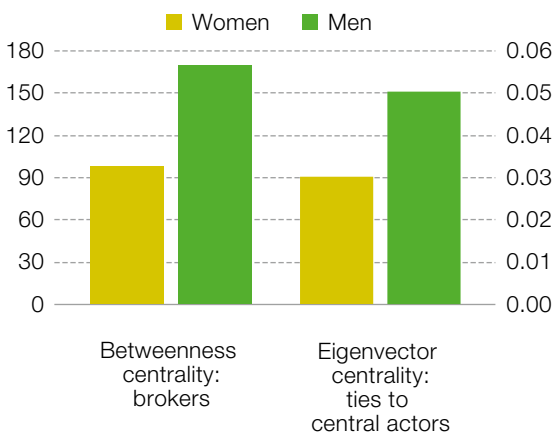


Figure 4.18
Betweenness and eigenvector centrality by gender, 2018



is added through transport and storage, the fact that women are weakly represented among the principal intermediaries is a difficult handicap to overcome.

A social network dominated by male intermediaries

The rice network can be disaggregated into five major types of professional roles that represent various stages in the value chain (Figure 3.5). (1) Producers cultivate rice by irrigation throughout the Niger River valley and its various tributary valleys *(dallols)*. These operations can consist of large areas of cultivation organised as co-operatives, or small individual parcels cultivated by individual farmers with the aid of motor pumps. (2) Rice bought from producers is transported to depots situated throughout the river valley by rural consolidators. (3) The rice is transported to wholesale depots, which are generally situated in large consumption markets. (4) Retailers buy small quantities of rice from wholesalers and resell these to (5) consumers.

The sociogram in Figure 4.19 visualises the respective position of each actor according to their professional role. The centre of the network is occupied by numerous intermediaries while the periphery includes numerous consumers. This depiction breaks with the linear imagery often adopted by studies of value chains in the region.

In the Dendi rice network, wholesalers located between rural assemblers and retailers are an essential link in the trade between producers and consumers. Often criticised for their speculative practices, they control bulk purchases, storage and resale and optimise the timing of exchanges around prices that benefit them. Without these wholesalers, however, the network would be fragmented into segments that would be unable to route their products to final consumers. Wholesalers are also well-connected to actors that are also well-connected: as a result, their eigenvector centrality is greater than most (Figure 4.20). The structural importance of wholesalers is visualised on Figure 4.21, which shows each actor according to their betweenness centrality: the more often they function as intermediaries between two unconnected actors the larger their size. The largest intermediaries are urban wholesalers located in medium-sized towns in the Dendi (Gaya, Malanville, Kamba) and in northwestern Nigeria (Jega, Argungu, Sokoto).

Rural assemblers and retailers are dependent on these wholesalers, with whom they are directly linked by clientelist relations, often long-established and involving social obligations and informal credit. Their particularly strong betweenness centrality is explained by their very large number of commercial partners. In a network where the direction of market links is known, degree centrality can distinguish rural assemblers from retailers (Figure 4.22). The former have a strong in-degree centrality because they buy agricultural products from a multitude of producers, while the latter have a high out-degree centrality because they sell their products to many consumers. Producers and consumers are at the periphery of the network and have a unique link, incoming or outgoing, with the rest of the actors. Because of this position, their betweenness and eigenvector centralities are very low.

Simultaneous consideration of the role and gender of participants in the rice network shows that women occupy structurally unfavourable positions relative to men. These gender disparities are particularly evident when actors in the network are represented in terms of their capacity to play intermediary roles, such as in

Figure 4.19
Professional roles in the rice value chain, 2018

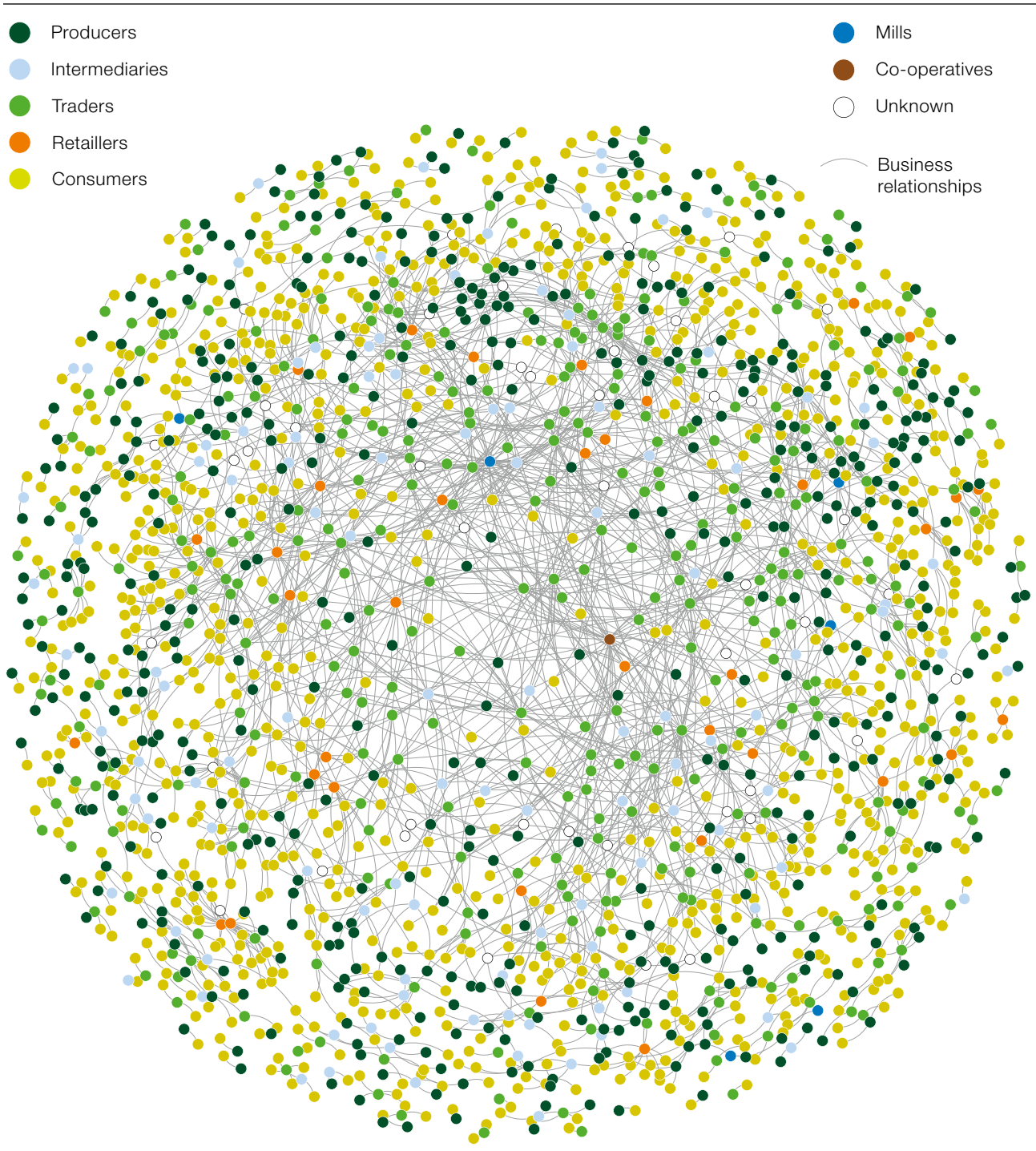


Figure 4.20
Betweenness and eigenvector centrality by role in the rice value chain, 2018

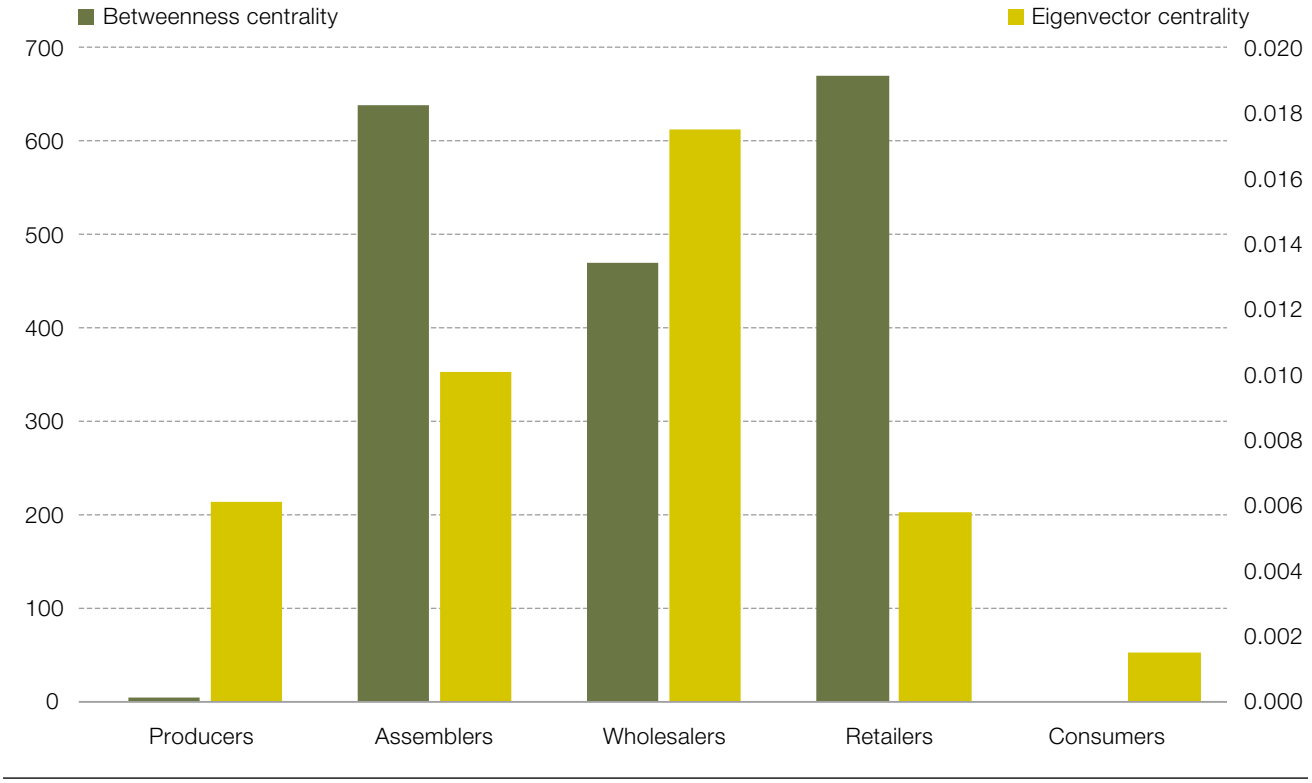


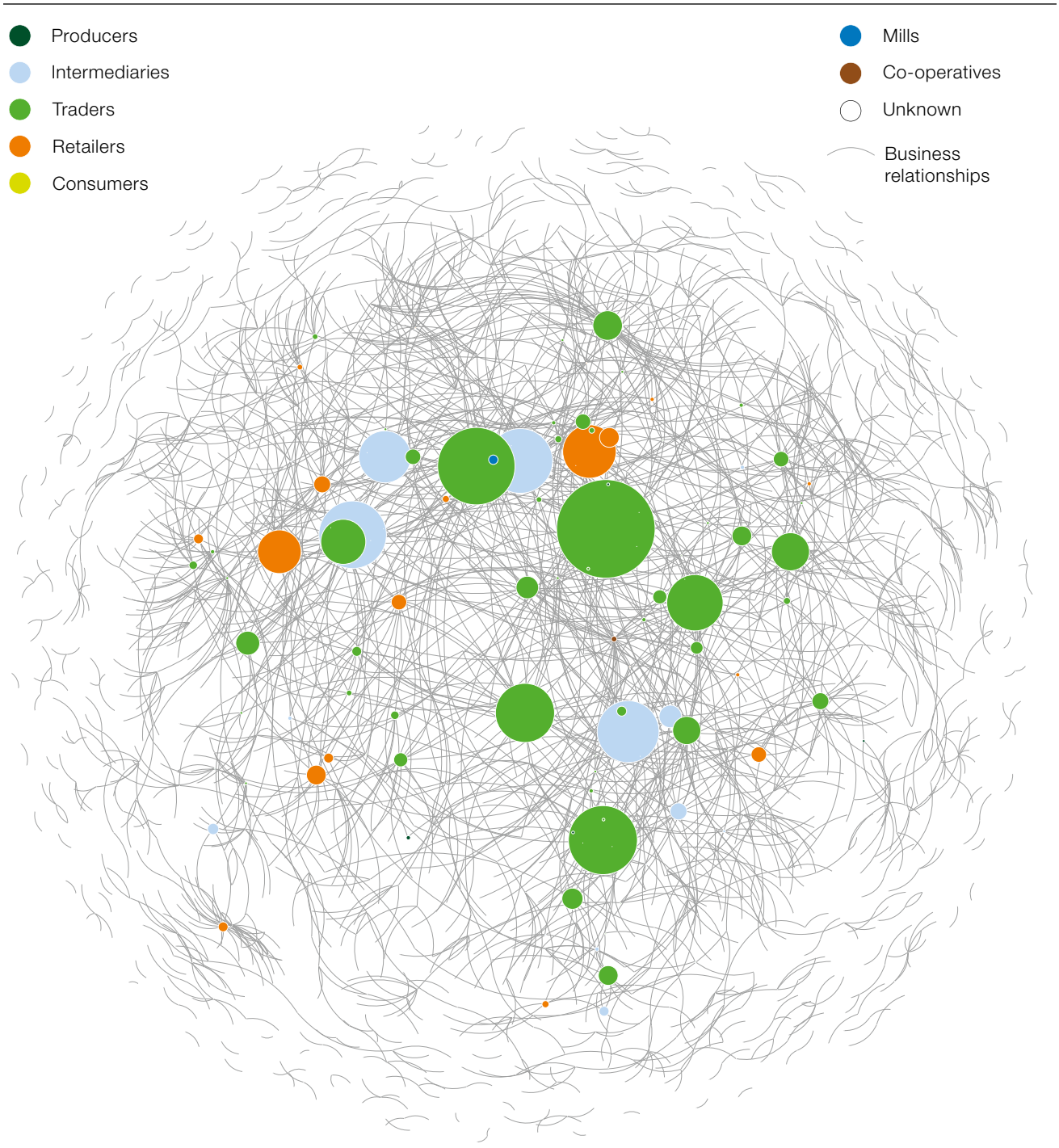
Figure 4.23. The large majority of the brokers situated at the heart of the network are men. Only rarely do women occupy structurally equivalent roles. It should be noted that the term "broker" indicates a structural position derived from the analysis of the entire social network, and not a professional occupation (Walther, 2014). West Africa has numerous professions dedicated to commercial intermediation called *diatigi, courtiers, rabatteurs* or *coxeurs* (Grégoire and Labazée, 1993; Whitehouse, 2012). In social network analysis, brokers are identified by their role in connecting actors that would otherwise remain separate (Spiro et al., 2013), are not necessarily known as such by society and do not necessarily identify themselves as such.

Gender and social capital

Gender disparities have important consequences for the social capital of men and women in the rice value chain. Generally defined as a social advantage resulting from access to resources within a network (Lin, 2001), the social capital of an individual is the result of two forms of centrality: the one that refers to the number of people to whom one individual is attached and that which relates to connections that can be made beyond the community (see Woolcock and Narayan, 2000). In other words, social capital results from the capacity of social actors to combine embeddedness and brokerage (Burt, 2005).

Social network analysis permits a precise measurement of the way in which each individual combines embeddedness and brokerage. Embeddedness is measured by degree centrality, which records the number of relationships held between each actor in the network. Brokerage is measured by betweenness centrality, which tell us about an actor's ability to build bridges between their community of origin and other social groups, connecting less dense spaces in the network called "structural holes" (Burt, 1992). Thus, by depicting

Figure 4.21
Brokers in the rice network, 2018

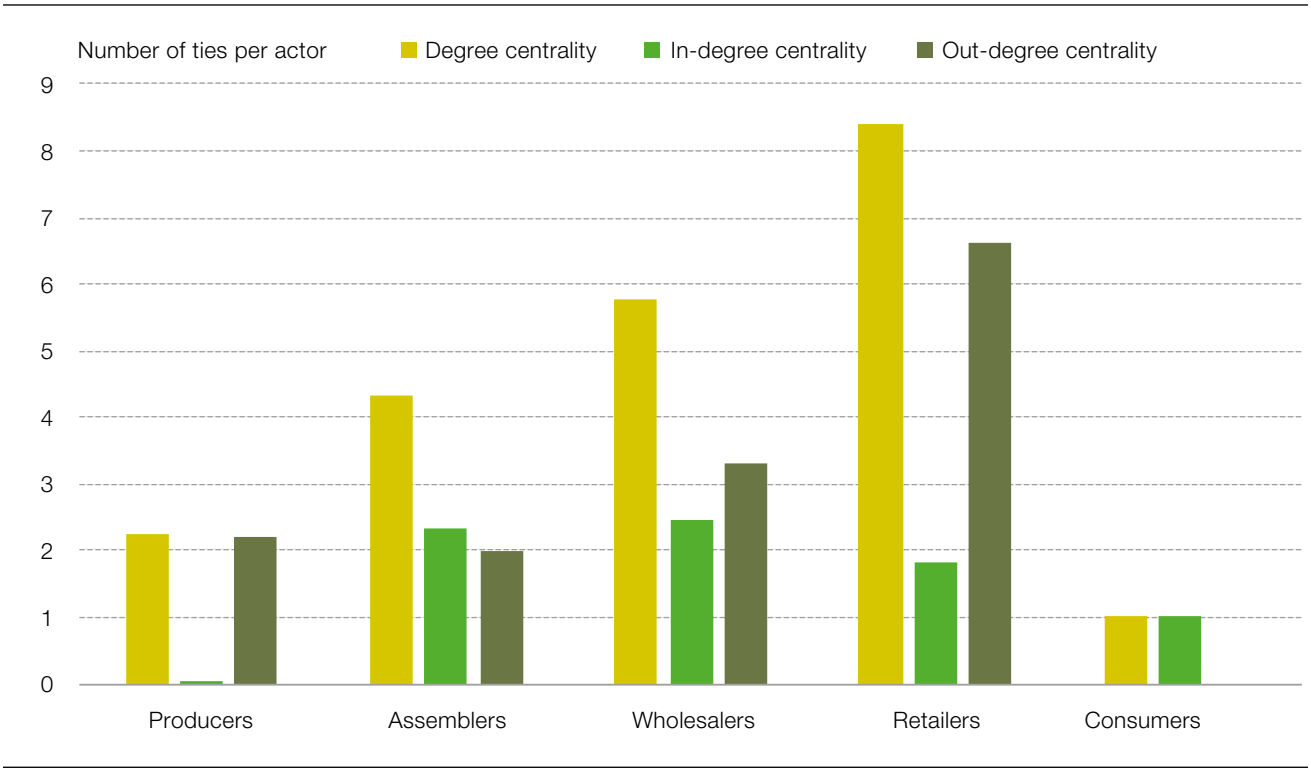


Note: The size of an actor is proportional to their betweenness centrality. The more intermediary an actor is, the larger they are.

the degree and betweenness centrality scores of each individual in the network on the same graph by gender, four levels of social capital become evident (Figure 4.24).

- Actors in the top right quadrant have the largest amount of social capital. Their number of relations (degree) and their ability to bridge (betweenness) are statistically greater than that of others. The actors are more than one standard deviation from the average. This privileged position is rare: less than 3% of entrepre-

Figure 4.22
Degree centrality by role in the rice value chain, 2018



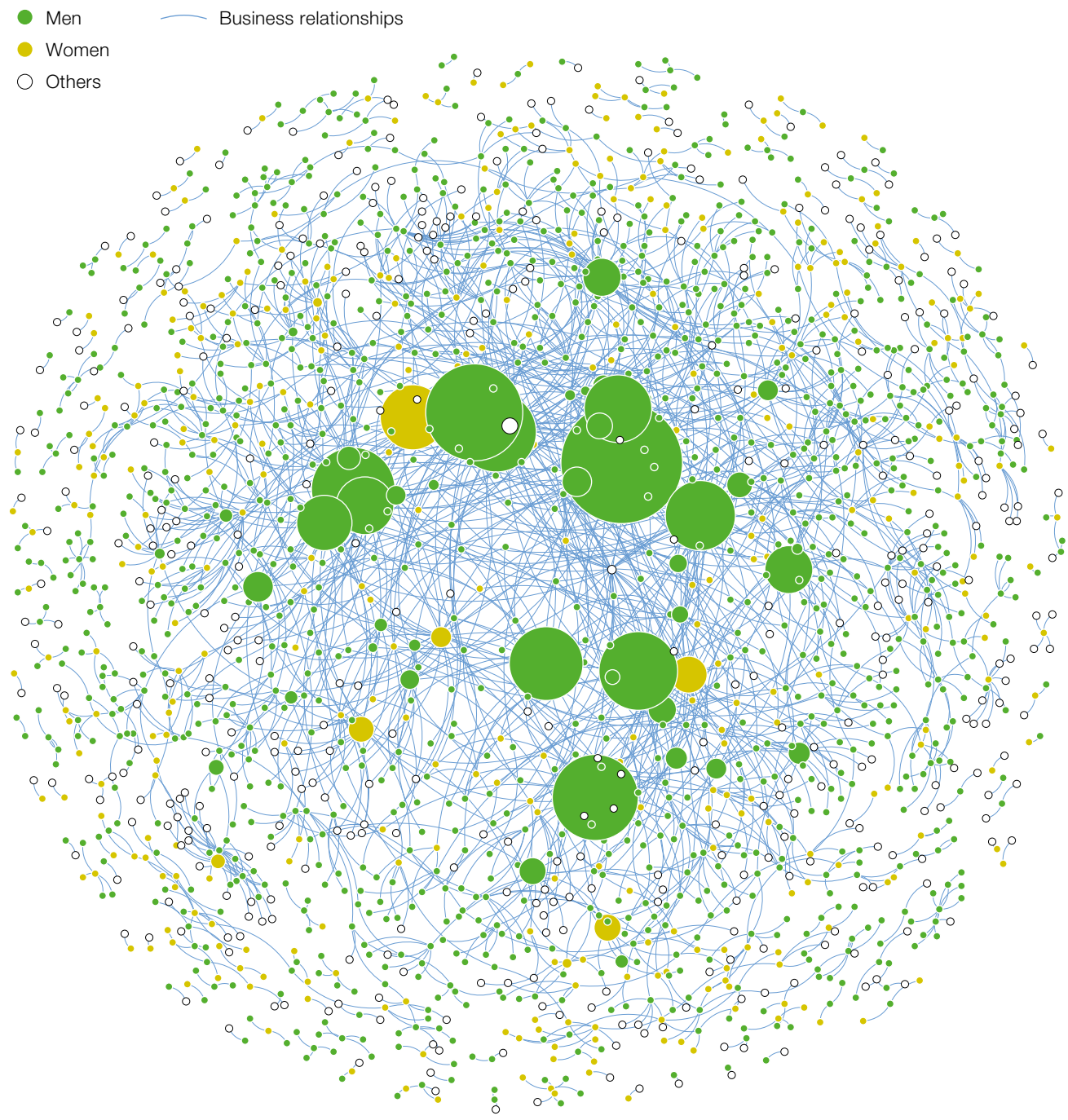
neurs in the network manage to combine these two sources of centrality. This quadrant is largely dominated by men: only 20% of actors with high social capital are women.

- Actors with lower social capital are situated in the bottom left quadrant of the graph. They are both less well-connected to other actors in the network and less able to play intermediary roles between their communities and other more distant actors or actors in different professional roles. This structural position is characterised by a weak degree and betweenness centrality and describes the majority of actors in this network (90% of the total). Women are slightly better represented in this quadrant than men.
- The upper left quadrant identifies the intermediaries that are less well-connected to the rest of the network. These actors resemble "pure brokers" whose principal activities are to connect other actors and derive some benefit. This structural position is relatively rare and almost exclusively occupied by men (9 out of 10). The social capital of these actors is very specialised due to their professional competencies or their situation at the interface of several commercial activities, like rice wholesalers in the large urban markets of the Dendi or the north of Nigeria.
- Actors in the bottom right quadrant have numerous commercial partners but these do not extend beyond the boundaries of their community. By consequence, their social capital is fundamentally decreased. Men are over-represented in this segment of the population (8%).

In the Dendi, women occupy a structurally peripheral role in comparison to men no matter what measure of centrality is used. Women are less numerous in the network, have fewer commercial partners, are less likely to play the role of intermediary and are less well-connected to central actors than men. These disparities are, however, less marked when the social capital of the entire network is measured by gender: only 2% of women and 3% of men are

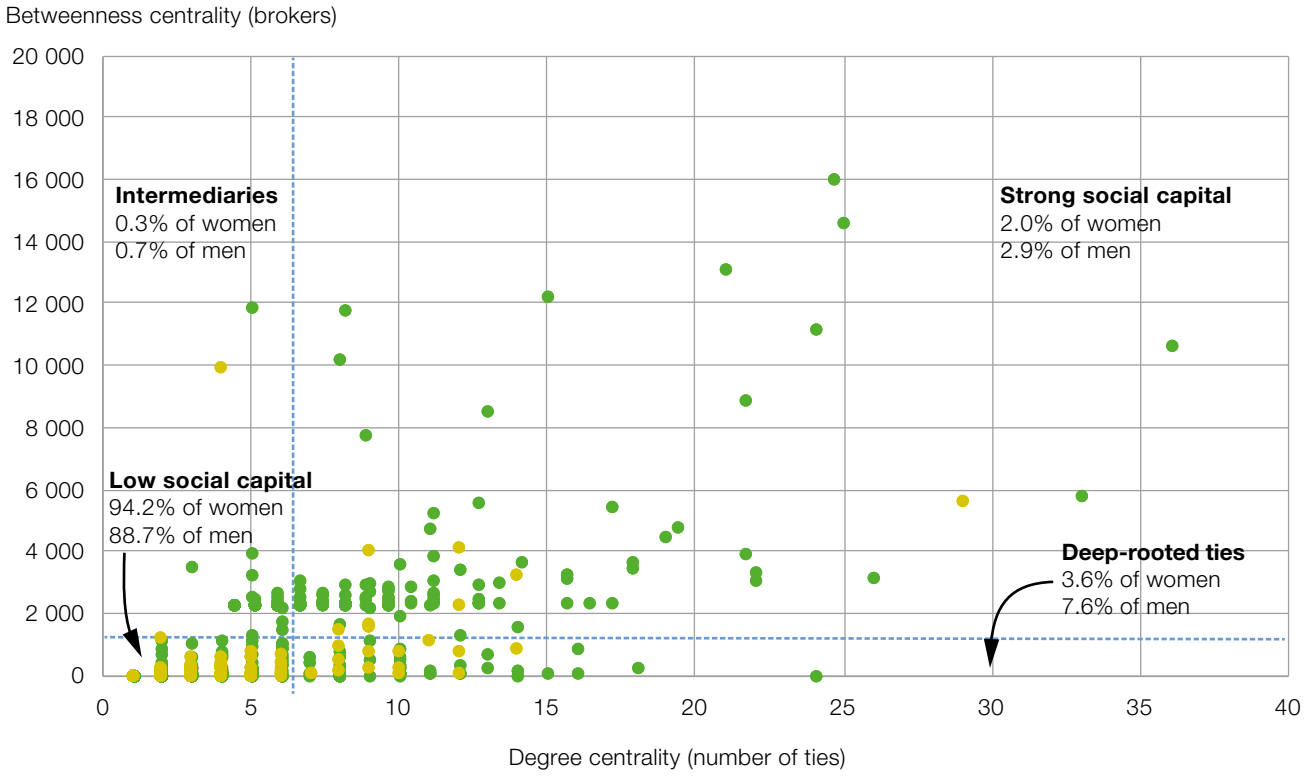
Figure 4.23

Betweenness centrality by gender, 2018



Note: The size of the circles is proportional to the brokerage capacity of actors (betweenness centrality).

Figure 4.24
Social capital by gender, 2018



able to effectively combine strong local embeddedness with a high betweenness centrality. The findings demonstrate the importance that social networks play in the economic development of the region and the social inequalities that they can generate.

THE UNPARALLELED COMMERCIAL ATTRACTION OF NIGERIA

Notwithstanding formal import restrictions, the bulk of the Dendi's rice production is sold on the Nigerian market. This finding demonstrates the remarkable informal integration of this network, capable of linking thousands of independent actors across several hundred kilometres. In this decentralised market big Nigerian actors occupy a dominant position due to their access to large financial service providers that allow them to play the role of wholesalers and to transport networks that enable them to convey rice from areas of production to the principal markets in their country.

The structural importance of Nigerian merchants in this network is evident, first and foremost, by the total centrality measure of actors by country. Table 4.8 confirms that Nigerian actors have more commercial partners on average (3.5) than those in Benin (2.8) or Niger (2.5). They are also the primary buyers and sellers of rice: their in-degree and out-degree centralities exceeds that of actors from other countries. Nigerian actors are by far best-connected to the most central actors as confirmed by their eigenvector centrality and they play a more significant intermediary role than actors in Benin or Niger.

The geographical extent of the network shows that the large majority of actors develop business relationships with actors within their own countries. Entrepreneurs that can play an intermediary role between Benin, Niger and Nigeria are rare, which suggests that the

Table 4.8
Centrality by country, 2018

Country	Degree			Betweenness centrality	Eigenvector centrality
	Total	In-degree	Out-degree		
Benin	2.8	1.2	1.6	244.1	0.003
Niger	2.5	0.9	1.6	143.9	0.005
Nigeria	3.5	1.8	1.7	266.8	0.012

rice market is segmented by country. This has already been observed with respect to the large merchants active in import-export activities in the region (Walther, 2015) and can be illustrated by applying the principle of homophily used for gender in the previous section. A homophilous network relative to the nationality of actors is one in which actors principally exchange their goods with other actors from the same country, whereas a heterophilous network is one characterised by a preponderance of cross-border business relationships.

In the Dendi region, all of the countries have an elevated homophily score, ranging from 72% in Niger to 77% in Nigeria (Table 4.9). In other words, almost three-quarters of links in the network do not cross national borders. This nationally-centred network structure is confirmed by E/I indices, which compare external links (E) and internal links (I) in each country. In Benin, as in Niger and Nigeria, index values are relatively high and negative, which indicates a relatively homophilous network within which only a minority of entrepreneurs have sufficiently well-developed networks to permit international commerce.

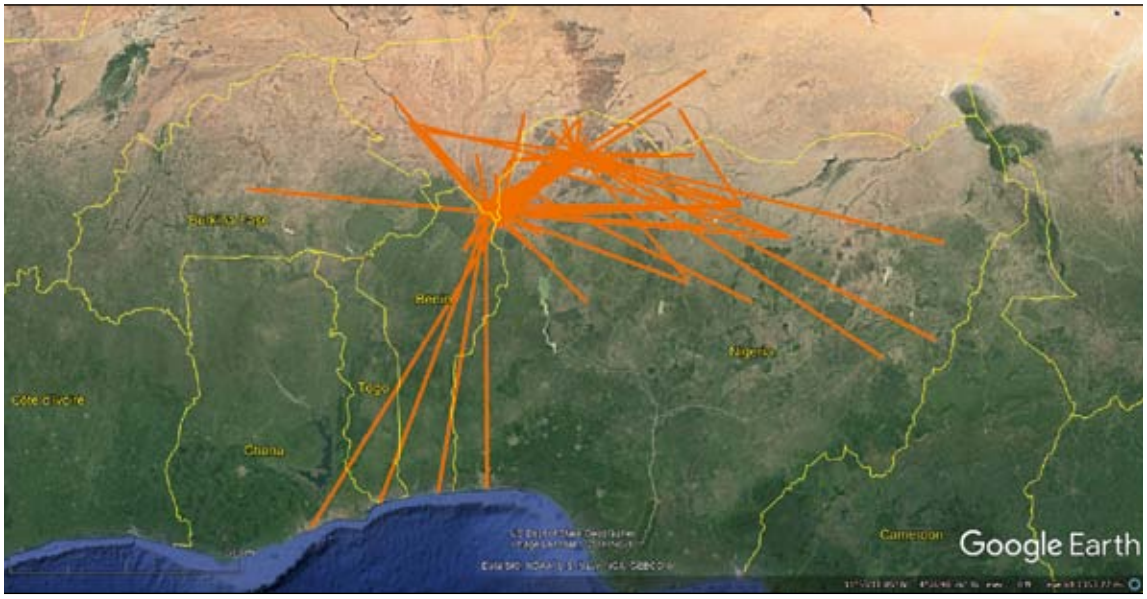
Actors in Nigerian towns have the greatest number of commercial relationships, on average. Among the ten most central cities, eight are located in Nigeria with three in close proximity to Sokoto, two to Kamba and one to Argungu. Nigerian towns are also where the entrepreneurs best-connected to central actors are located. The towns to the far east of the Nigerien part of the Dendi have high levels of centrality because of their proximity to the Nigerian market: the largest brokers come from Sokoto, Jega and Argungu in Nigeria and from the Nigerien markets to the east (the Tounouga region) (Map 4.6).

The Dendi's major cities generally have a higher centrality than the regional average

Table 4.9
Actor homophily in the rice value chain, 2018

Country	Homophily Percentage of ties maintained within each country	E/I Index Tendency to trade outside one's country (varies from +1 to -1)	Interpretation
Benin	75.8	-0.515	Beninese merchants trade mostly with actors from their country
Niger	71.5	-0.431	Nigerien merchants trade mostly with actors from their country
Nigeria	76.9	-0.538	Nigerian merchants trade mostly with actors from their country

Map 4.6
Regional rice trade network



Source: Google Earth, 15 January 2019

(Table 4.10). There is little difference between the average number of links (degree) between Gaya in Niger, Malanville in Benin and Kamba in Nigeria. By contrast, Kamba is clearly the most central location for brokers (betweenness) and well-connected actors (eigenvector).

These local differences can be explained by the specialisation of the rice network in Dendi. As Map 4.7 shows, rice produced in the Niger River valley is stored in small and medium urban centres that punctuate the river valley. A portion of the rice is exported to the major cities in northeast Nigeria from Gaya or Malanville, as indicated by the large number of links between the two cities. Another portion of the Nigerien and Beninese production transits Kamba, which serves as a port of entry to the Nigerian market.

On Nigeria's northern borders, high demand for local rice has created a remarkably geographically-integrated network. The rice produced on the banks of the Niger River is largely sold in Nigerian markets almost 300 kilometres away where it enriches a small number of intermediaries that are able to control national markets. Few women occupy this segment of the market, participation in which requires access to financial services that enables the bulk purchase of rice, then the ability to store it before resale at the best price.

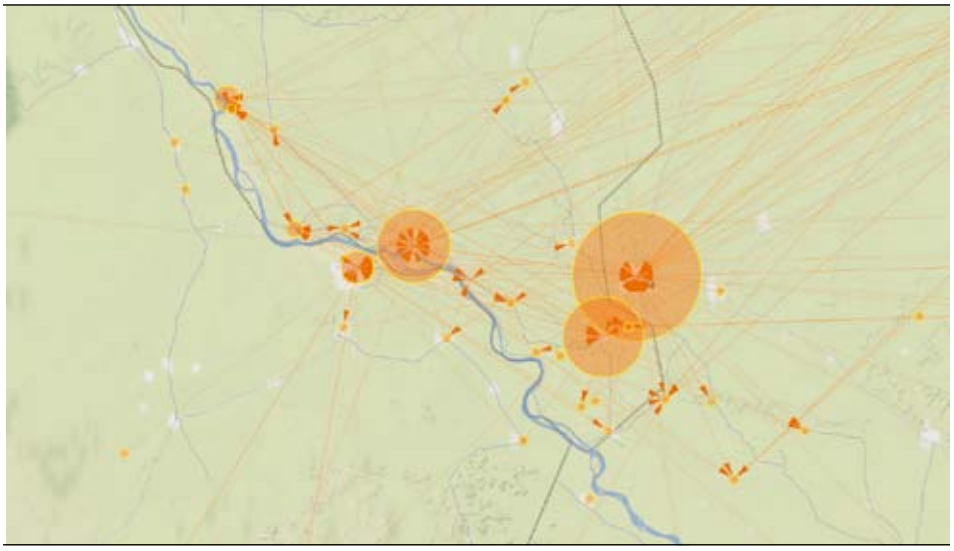
Although it produces profound gender inequalities, the development of this network nevertheless bears witness to the ability of local entrepreneurs to take advantage of the demand generated by population growth and urbanisation. This example of integration from below happened largely in the absence of public policies put in place by the states or their international partners. In a region dominated by informal cross-border trade for decades, the rice value chain has developed despite import restrictions aimed at protecting domestic rice production from imported Asian rice (Daily Trust, 2018).

Table 4.10
Centrality of the Dendi's main urban centres, 2018

Urban centre	Degree	Betweenness centrality	Eigenvector centrality
Gaya	2.8	175	0.007
Malanville	2.9	266	0.004
Kamba	2.6	332	0.011
Regional total	**2.6**	**172**	**0.006**

Map 4.7

Dendi rice trade network



Source: Google Earth, 15 January 2019

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Chapter 5

The governance networks supporting women entrepreneurs in West Africa

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Chapter 5 maps the governance networks of actors involved in supporting the economic activities of women in West Africa. An analysis of partnerships between organisations shows, first, that international organisations and certain West African and European countries play a central role in the governance networks related to gender. A synthesis of the programmes, priorities and partnerships of nine organisations among the hundreds involved in this area of governance illustrates the diversity of initiatives designed to promote the place of women in the productive economy and commerce in West Africa. Finally, an analysis of relationships between individuals within these organisations suggests that this field of governance remains fragmented. Nearly one in four actors is disconnected from the central network. This fragmentation and the absence of major intermediaries in the network contributes to weak co-ordination of development policies designed to help women entrepreneurs in the region.

Key messages

- The governance network supporting women entrepreneurs has a relatively dense centre composed of international organisations, some West African countries and Western partners that are at the heart of a wide range of initiatives.
- However, very few well-connected organisations can play an intermediary role at the regional level and the exchange of information between them is fragmented.
- The fragmentation of the governance network contributes to weak co-ordination of development policies designed to help women entrepreneurs in the region.

THE GOVERNANCE NETWORK SUPPORTING WOMEN ENTREPRENEURS

Promoting women's entrepreneurship is the core of development strategies implemented by states, governmental and non-governmental organisations, professional associations and private businesses working in the field of gender in West Africa. This collection of initiatives forms a governance network whose boundaries are difficult to grasp because of the diversity of actors involved. Who are the most central actors? How are they related to one another? What are the structural constraints that limit their co-ordination?

Two regional studies based on social network analyses contribute to answering these crucial questions for development policies in the region. The first identifies as comprehensively as possible the organisations involved in the promotion of women's entrepreneurship in West Africa as well as their formal partnerships. A second study maps how the individuals working for these organisations exchange information related to the economic promotion of women in the region. This study combining organisations and individuals shows the scope of a governance network that transcends geographical scales, sectoral boundaries and organisational limits in West Africa.

Mapping shows that the network of formal partnerships has a relatively dense centre composed of multinational and supranational

organisations capable of conceiving regional programmes, of West African governments (in particularly those in the Sahel) and Western partners. The periphery, on the other hand, is populated by more specialised organisations that are usually non-governmental or associations. With the exception of the United Nations, the network has very few well-connected organisations that can play an intermediary role at the regional scale. The map of current relationships between these organisations shows that information exchange related to the promotion of women's economic activity is fragmented. The network has a random structure within which the actors are divided into small communities. Neither gender nor geographical location seems to be a principal factor in network fragmentation.

THE NETWORK OF FORMAL PARTNERSHIPS

The identification of organisations involved in supporting the economic activities of West African women involved an exhaustive review of annual reports, strategic frameworks and public documents produced by governmental and non-governmental organisations, private businesses, professional groups and civil society organisations in recent years. This literature review was complemented by a study of 57 decision makers in the region between January and June 2018, which solicited the names and purposes of partnerships established by the organisations surveyed since 2016. This data enabled the mapping of the regional governance network: each node in the network is an organisation connected by one or several formal partnerships aimed at promoting the economic activities of women in the region.

No fewer than 101 organisations with variable institutional competencies and objectives worked in this area in 2018. This figure is quite remarkable to the extent that the economy constitutes a sub-area of programmes dedicated to gender in the region. More than one-third of organisations identified are governments, primarily from West Africa, Europe and secondarily from North America (Figure 5.1). One-fifth are professional networks and associations that convene the producers or merchants of the region, like the Network of Farmers Organisations and Agricultural Producers of West Africa (ROPPA) or the Association of West African Women (WAWA). The non-governmental organisations, like Action Against Hunger or OXFAM, and multinational and supranational organisations like the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS) or the Economic Community of West African States (ECOWAS) each represent 15% of actors.

The identified organisations have established 173 formal partnerships with one another in the area of promoting women's economic activities in West Africa from 2016 to 2018. The density of this network is consequently quite

Figure 5.1
Types of organisations involved in the regional governance network

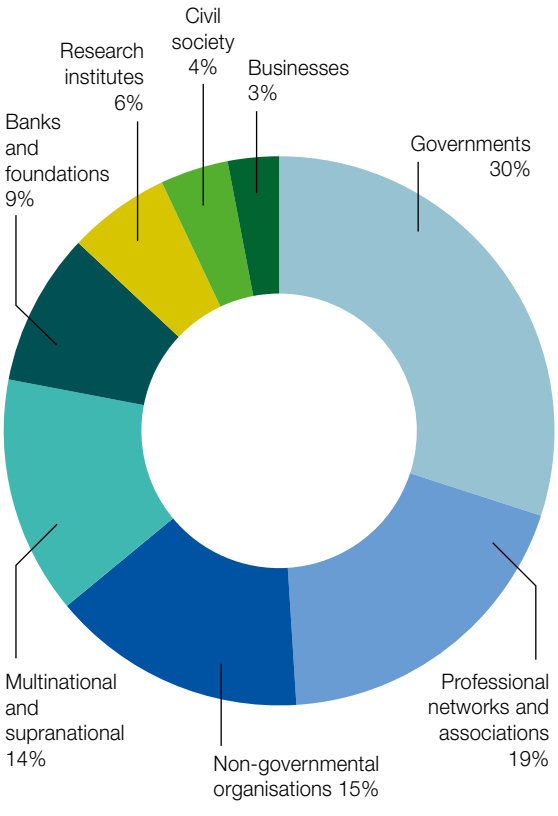
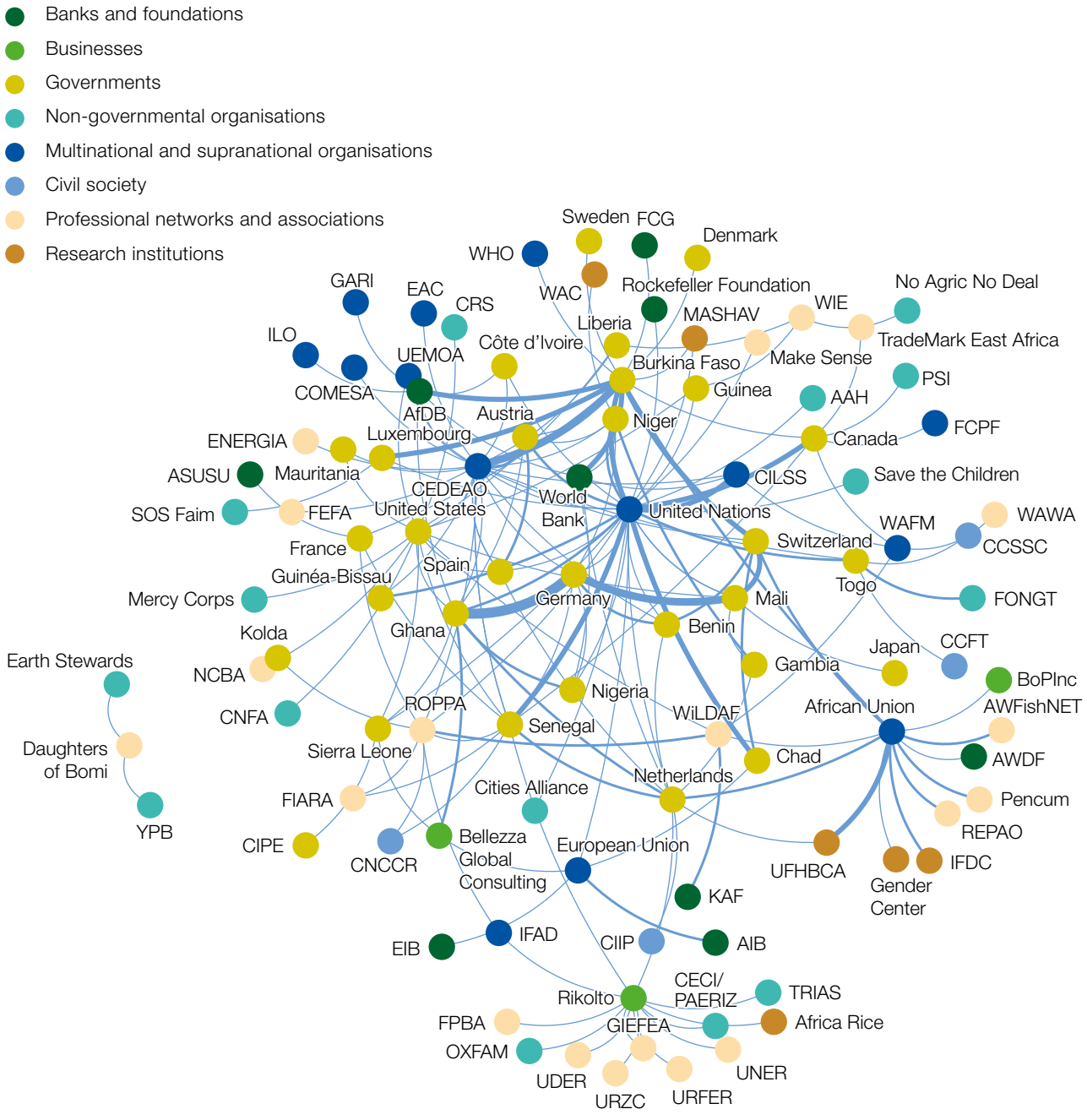


Figure 5.2

Formal collaborations between organisations involved in promoting women entrepreneurs in West Africa



Note: The thickness of the links between organisations is proportional to the number of formal partnerships established between them in the area of promoting the economic activities of women in West Africa.

weak: only 3.4% of potential links that could be established between organisations were actually found in the network. The map of these relationships shows that the network of formal collaborations resembles a centre-periphery structure within which a relatively dense core of actors faces a group of loosely-connected actors (Csermely et al., 2013).

The core of the network is made up of multinational and supranational organisations, such as the World Bank, the United Nations, the African Union and ECOWAS; of several West

Table 5.1
The 10 most central organisations

Rank	Degree centrality Number of partners		Betweenness centrality Intermediary role		Eigenvector centrality Connections to the most central actors	
1	United Nations	49	ECOWAS	0.12	United Nations	0.66
2	Burkina Faso	32	Burkina Faso	0.11	Burkina Faso	0.55
3	ECOWAS	31	World Bank	0.10	ECOWAS	0.44
4	African Union	21	United Nations	0.09	Ghana	0.34
5	Ghana	19	AfDB	0.05	Germany	0.32
6	Germany	16	African Union	0.04	Switzerland	0.27
7	Senegal	15	Niger	0.04	Senegal	0.26
8	United States	15	United States	0.04	Austria	0.25
9	Netherlands	14	Senegal	0.04	Mali	0.21
10	Switzerland	14	CILSS	0.03	Canada	0.20
Average		4.8		0.01		0.08
Standard deviation		7.4		0.02		0.11

African nations such as Burkina Faso, Ghana, Mali, Niger and Senegal, and governments that are supportive of gender and economic development in West Africa like Austria, Canada, Germany, the Netherlands, Switzerland and the United States (Figure 5.2). The periphery is composed of non-governmental organisations and professional associations where regional scope and, consequently the number of partnerships, is more limited.

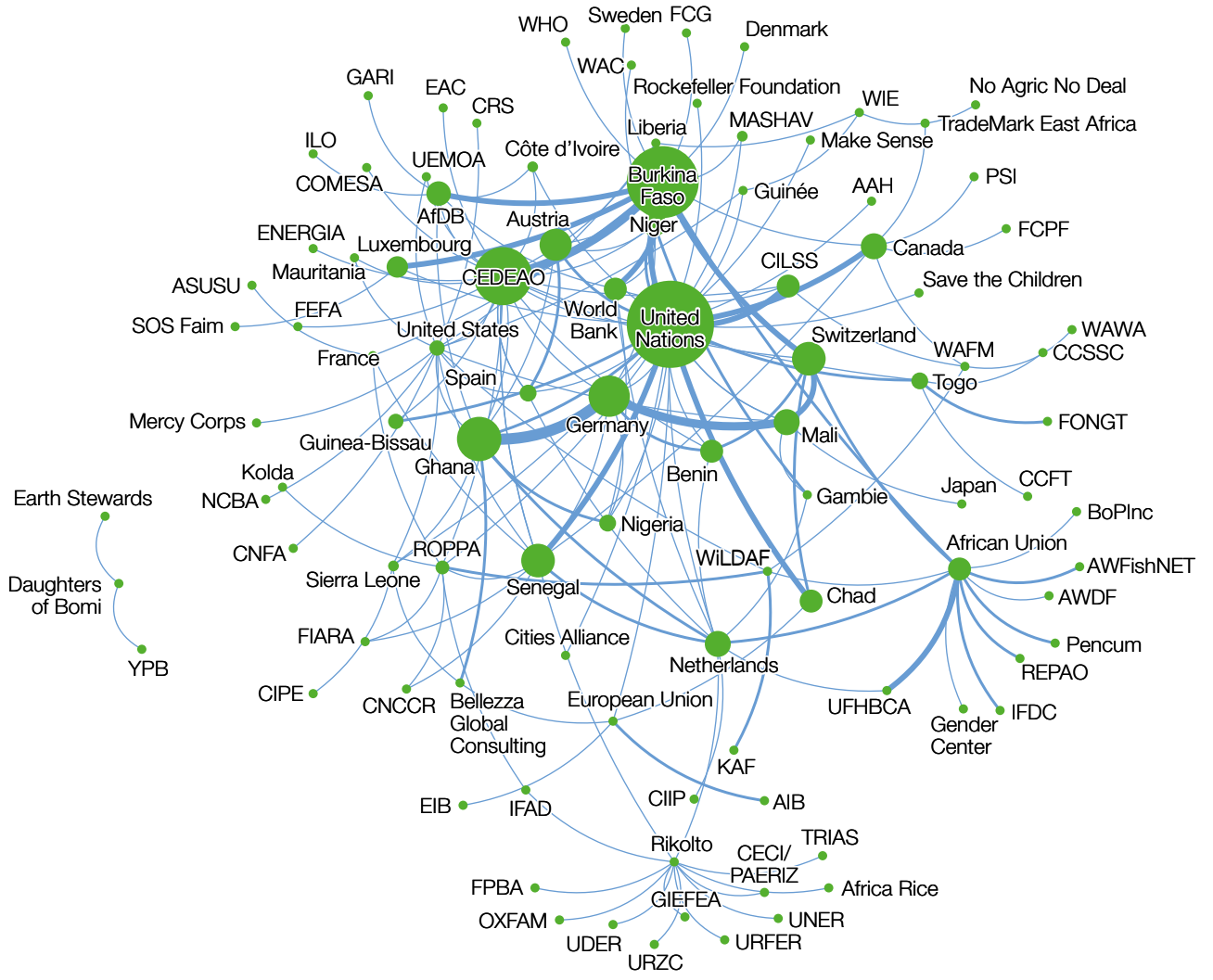
The structure of the network focused on women in the region is, however, far from an exact representation of a centre-periphery model as developed in the literature on social networks (Borgatti and Everett, 1999). The correlation between the structure observed in the region and a theoretical network in which the centre and periphery form two distinctive groupings is only 0.46, which suggests that numerous relationships between peripheral actors do not in fact pass through the centre. This value is also smaller than that of the network of cross-border co-operation in West Africa, which presents a much clearer distinction between central and peripheral organisations (OECD/SWAC, 2017).

Several measures of centrality shown in Table 5.1 determine the structural importance of organisations involved in the governance network, according to the number of partnerships it has (degree), its role as intermediary (betweenness) or their connection to the most central actors (eigenvector).

- *Degree centrality*. Each organisation has 4.8 partnerships on average. Multinational and supranational organisations have the greatest number of partnerships (9.1), ahead of governments (7.8). UN agencies active in the field of gender (United Nations International Children's Emergency Fund – UNICEF, United Nations Development Programme – UNDP, World Food Programme – WFP, UN Women, United Nations Population Fund – UNFPA) are the most connected, with 49 partnerships, followed by ECOWAS (31) and the African Union (21). These organisations support regional-scale initiatives aimed at women such as the Sahel Women's

Figure 5.3

Eigenvector centrality of organisations involved in promoting women entrepreneurs in West Africa



Note: The organisations involved in the promotion of the economic activities of women are represented by circles proportional to their connection to the most central actors (eigenvector centrality). The thickness of links between organisations is proportional to the number of partnerships between them.

Empowerment and Demographic Dividend (SWEDD) Project organised by ECOWAS with the support of the World Bank, UNFPA and the West African Health Organisation (WAHO). Burkina Faso is by far the country with the largest number of partnerships (32), which can be explained by the proliferation of initiatives led by international financial institutions and Western partners in this country.

- *Betweenness centrality*. Few organisations are capable of playing an intermediary role in a network of this nature. Those that manage it the best are multinational and supranational organisations, whose betweenness centrality is significantly higher (0.021) than the average (0.008). ECOWAS, in particular, appears to be an important broker through its investment in several projects tied to states in the region and international organisations, such as 50 Million African Women Speak, a platform aimed at helping women entrepreneurs in 36 countries, financed by the African Development Bank (AfDB).

- *Eigenvector centrality*. The centre-periphery structure of the governance network accords an advantage to actors situated close to the centre, with which other organisations tend to have preferential relationships. In a less dense governance network like that supporting the economic activities of women, it is therefore crucial to tie partnerships to organisations that are themselves well-connected to others in the region. The advantageous positions of these organisations are clearly visible in Figure 5.3, which represents each actor proportionally to its propensity to be connected to other well-connected actors. Governments (0.148) and multinational and supranational organisations (0.124) have the highest eigenvector centrality, close to double the average (0.076). The United Nations, Burkina Faso and ECOWAS score particularly high on this measure. Certain Western partners, such as Austria, Germany and Switzerland have an equally high eigenvector centrality.

This relational approach highlights the diversity of organisations involved in the promotion of the economic activities of women in West Africa and their structural importance. It shows that the governance network is predominantly made up of partnerships between large multi- or supranational organisations, states, and Western partners capable of developing regional initiatives. This approach must, however, be complemented by more qualitative analyses of the substance of programmes designed to support women in the region (as discussed below).

The diversity of gender initiatives

Nine organisations from among the hundreds involved in this area of governance were selected to illustrate the diversity of initiatives related to the promotion of the economic activities of women in West Africa. This selection derives from the previous analysis of social networks. It includes ECOWAS, the WFP and the AfDB, all three of which are close to the centre of the network, five Western states that have recently initiated gender programmes (Belgium, Canada, France, Germany, Switzerland) and a non-governmental organisation (Women in Informal Employment: Globalizing and Organizing – WIEGO) that specialises in women in the informal economy. Each case provides a summary of programmes, priorities and the organisation's economic partnerships.

ECOWAS' Plan of Action on Gender and Trade

ECOWAS (2014) has formulated a gender strategy in alignment with its framework on trade and development with reference to market liberalisation and the free movement of goods and persons. Particular emphasis is given to cross-border trade and linkages to regional integration with specific reference on how to build productive capacity in the agriculture export markets.

There has been increasing recognition of the impact of gender on the differentiation of trade activities along the commodity supply and value chain, with women being more involved in processing and marketing. In 2013, an ECOWAS meeting on gender and trade provided recommendations for future interventions including gender mainstreaming within policy formulation, infrastructure investment, and enhancing women's access to credit.

Within the ECOWAS strategy, priority actions have been identified on gender-sensitive trade policies and regulations. These actions touch upon various thematic areas including women's empowerment in relation to improved export competitiveness; gender mainstreaming of trade policies and trade negotiations; capacity building focusing on the rights of women traders, custom processes, and trade negotiations. This is supplemented by capacity building targeting customs and border officials. Other actions include improved co-ordination mechanisms covering governmental agencies involved in trade and border management, infrastructure investment to facilitate productive activities, enhance security for women traders and enhanced research and gender-disaggregated data collection for decision making.

ECOWAS is the largest broker in terms of women's economic policies in the region. In terms of implementation, only generic partnerships are referred to within the gender and trade strategy such as development partners, civil society organisation and NGOs. However the ECOWAS Gender and Development Centre (EGDC), which is leading strategy co-ordination, is involved in a number of regional and international platforms including the Gender Thematic Group co-ordinated by UN Women, the African Union's Gender Task Force, the New Partnership for Africa's Development (NEPAD) Gender Task Force and the Network of African and Spanish Women for a Better World.

World Food Programme's Gender Policy

To bridge gender gaps in food and nutrition security, the WFP (WFP, 2015: 2) developed a "gender transformative approach to food assistance programmes and policies". The overarching goal of the Gender Policy 2015–20 is to integrate gender equality and women's empowerment in all WFP programmes and activities to ensure that food and nutrition security needs are met for women, men, boys and girls.

The WFP Gender Policy (2015) aims to promote equal participation "in the design, implementation, monitoring and evaluation of gender-transformative food security and nutrition policies and programmes". The WFP is aware that "women and girls have increased decision-making power regarding food security and nutrition in households, communities and societies". Its food assistance programmes should not "compromise safety, dignity and integrity of the women, men, girls and boys who are receiving it, and it is provided in ways that respect their rights".

In West and Central Africa, the regional gender implementation strategy aims to "promote discussion and deepen understanding at all levels around how gender norms influence the challenges and opportunities of men, women, girls and boys in the region for staff and beneficiaries alike". The WFP Dakar bureau has commissioned numerous case studies across West Africa and the Sahel to document gender disparities and elaborate gender-sensitive policies for the region (WFP, 2016–17, a, b, c, d).

The network analysis confirms that WFP is a leading actor that works towards its gender policy objectives with governments, other UN agencies, civil society organisations including women's groups, academia, research organisations and the private sector (women-led businesses).

African Development Bank's Gender Strategy

The AfDB Gender Strategy is aligned to a corporate vision for African transformation founded on competitive, diversified and integrated markets driven by accelerated growth. Consequently, within the strategy, there is particular emphasis on women's participation in skilled labour markets and engagement in high-level policy processes. The AfDB Gender Strategy (AfDB, 2013) was developed in response to prior reviews and evaluations of gender action plans, including the review of the Updated Gender Plan of Action 2009–11. This benefited from a broad consultation process that was undertaken with member states.

The strategy outlines legal status and property rights which address gender-focused governance, legal reforms and secure land tenure targeting women farmers. The Bank is also promoting economic empowerment through enhanced access to financial services, increasing farm productivity, training in science and technology, and improved market inclusion. Gender equality has become central within infrastructure provision, knowledge management and capacity building. In particular, attention is given to targeted technical assistance on knowledge management for gender equality, gender reporting, sex disaggregated data and statistical analysis.

Proposed partners for strategy delivery are highlighted according to thematic area. In relation to knowledge management and communication, partnerships with the Economic and Statistical Observatory for Sub-Saharan Africa (AFRISTAT) and the United Nations Economic Commission for Africa (UNECA) on the African Gender and Development Index are underlined. While capacity building focuses on gender mainstreaming, highlighting collaboration with the UNDP-led Global Gender and Economic Policy Management Initiative. At continental level, AfBD is in liaison with established

partners such as NEPAD, the African Union and the African Capacity Building Foundation. Globally, collaboration continues with agencies involved in the co-ordination of the post-2015 agenda including the OECD Development Assistance Committee (DAC), the DAC Network on Gender Equality (GENDERNET) and UN Women.

Belgian Development Co-operation and gender

The Belgian Development Co-operation's (DGD) strategic policy notes aim to define a common vision around a central theme and provide a framework for specific actions and measures to be taken (DGD, 2016; 2017). The DGD's actions are targeted towards achieving the established Sustainable Development Goals (SDGs), notably SDG 5, to "achieve gender equality and empower all women and girls" and SDG 2, to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture." The DGD's actions also consider the EU Gender Action Plan (2016–20) and the Federal Laws on Development Co-operation (2013) and on Gender Mainstreaming (2007).

In the systematic promotion of gender equality and women's empowerment in assessments, analyses and actions, the DGD's objective is founded on a human rights based-approach that integrates specific actions and gender mainstreaming, and considers national and/or local priorities. The following four priority areas have been specifically identified to integrate the gender dimension: education and decision making; sexual and reproductive health and rights; food security, access to natural resources and economic empowerment; and protection of rights and the fight against gender-based violence, with a particular focus on lesbian, gay, bisexual, transgender/transsexual and intersexed issues.

The DGD's projects are mainly implemented by the Belgian Development Agency (known as Enabel since 2018) and works with ministries at the technical level in partner countries. It is advocating the integration of the gender dimension within national and regional governments and partners, humanitarian partners, civil society organisations, the private sector, among others. It provides financial support for both its strategic and operational implementation and funds international organisations that are active in agriculture, food security (Food and Agriculture Organization – FAO, International Fund for Agricultural Development – IFAD, WFP and the Consultative Group on International Agricultural Research – CGIAR) and gender (UN Women, UNFPA, the Office of the United Nations High Commissioner for Refugees – UNHCR, UNICEF and UNDP) and contributes to the definition of their strategic orientations. Furthermore, the DGD collaborates with universities and scientific institutes (e.g. University Co-operation for Development and the Flemish Interuniversity Council) by providing funding, consulting on strategic orientations and supporting the training of qualified researchers from DGD partner countries.

Canada's Feminist International Assistance Policy

In June 2017, Canada launched its Feminist International Assistance Policy (FIAP), placing gender equality and the empowerment of women and girls at the core of its assistance (Government of Canada, 2017). It highlights that inequality must be addressed to reduce poverty. Hence, promoting gender equality and investing in women and girls are the most appropriate actions. FIAP also recognises that women and girls are powerful agents of change and a driving force for sustainable economic growth.

FIAP uses both a targeted and crosscutting approach, and it focuses on delivering more integrated and responsive assistance to improve and maximise its effectiveness. Through FIAP, Canada will ensure that "by 2021–22 no less than 95% of [its] bilateral international development assistance initiatives will target or integrate gender equality and the empowerment of women and girls" (Government of Canada, 2017). Canada would like to establish itself as a "feminist donor" and "leader" in promoting gender equality and the empowerment of women and girls worldwide.

FIAP's core action areas are gender equality and the empowerment of women and girls. Its other action areas include "health and nutrition, education and gender-responsive humanitarian action", "sustainable agriculture, green technologies and renewable energy", environmental actions that focus on "adaptation, mitigation and water management",

inclusive governance, which "includes democracy and political participation, human rights and the rule of law", and inclusive peace processes and combat[ing] gender-based violence" (Government of Canada, 2017).

To close gender gaps, Canada seeks to build more effective and productive multi-stakeholder partnerships. It is supporting and investing in targeted innovation, research and advocacy that have the greatest potential to close gender gaps. To advance FAIP, it is seeking to build partnerships with local women's organisations at the grassroots level, multilateral and international organisations such as the UN, the G7, the G20, the Commonwealth, *La Francophonie,* philanthropic foundations, developing country governments, and the private sector through supporting women entrepreneurs, trade and investment.

French Development Agency's Strategic Vision on Gender

For the first time, the French Development Agency (AFD) launched an initiative for formulating its own strategic vision on gender equality and women's empowerment in 2013 (AFD, 2013). This strategy formulation resulted in various methodological and orientation notes and guidelines that provided an overall direction for improving AFD's practices on gender equality. The strategy is evaluated annually by the *Haut Conseil à l'égalité entre les femmes et les hommes,* along with the Gender and Development Strategy 2013–17 (France Diplomatie, 2013).

AFD's cross-cutting action framework promotes gender mainstreaming, and identifies several strategic and operational objectives. Strategic objectives include the promotion of equal opportunities between women and men, and the improvement of the efficiency and sustainability of operations financed by AFD.

Operational objectives include the prevention of gender inequality in AFD's operations through gender "roadmaps" specific to AFD sectors and geographic intervention/structure gender mainstreaming throughout the project cycle. AFD also intends to make the gender issue a key objective of its interventions and build internal capacity on gender issues. Finally, AFD aims to support societies that are tackling gender issues, to raise awareness among its partners on gender issues and to participate in debates on gender and development.

AFD is funding projects and programmes with local authorities, such as ministries at the technical level in charge of promoting gender, the private sector, civil society organisations and non-governmental organisations at the local level (including women's associations), bilateral agencies, international organisations, financial institutions and universities, among others. Some of these partnerships are with AfDB, CARE, the Department for International Development (DFID), the European Commission (EC), IFAD, International Union for Conservation of Nature (IUCN), Plan International, UN Women and the World Bank.

Cross-sectoral Strategy for Gender Equality in German Development Policy

In 2014, the German Federal Ministry for Economic Co-operation and Development (BMZ) adopted a cross-sectoral gender equality strategy to address both the current challenges and the existing realities of gender discrimination (BMZ, 2014). The strategy advocates a human rights-based, transformative approach to gender, which consists of policy dialogue, empowerment and gender mainstreaming to promote gender equality. It also intends to make financing for development more gender-responsive, which is done through promoting policy coherence, transparency, accountability, monitoring and evaluation. Within this context, BMZ developed a gender action plan 2016–20 that is committed to further achieving its targets (BMZ, 2016).

The gender action plan sets out objectives with specific indicators and targets. The sector-specific priorities to promote gender equality and women's empowerment include access to justice and legal services for women and girls, political participation, voice and leadership. In the economic sector, the plan aims to invest in rural development, agriculture and food security, education, gainful employment and economic empowerment. The German action plan also aims to protect women and girls from violence against them, and respond to armed conflicts, peacekeeping and displacement. Finally, the gender action plan includes sexual and

reproductive health and rights, water and sanitation, and climate change, disaster risk management, sustainable development and urban and municipal development.

Cross-sectoral activities that are intended to enhance the effectiveness of the approach include co-operation with women and male stakeholders, tackling multiple discrimination, gender equality in development financing, empowering women and girls through sports, gender competence/ knowledge management, measures to implement the gender approach, and strengthening women's organisations.

The action plan is implemented, monitored and evaluated through annual reports, strategy papers, gender-specific analyses and gender-sensitive project planning and management. BMZ uses the OECD-DAC Gender Equality Policy Marker to keep track of gender-specific funding. In West Africa, Germany was involved in the "Mainstreaming gender for a climate resilient energy system in West Africa" project with ECOWAS and numerous other projects in Ghana, for example.

Switzerland's Strategy on Gender Equality and Women's Rights

Switzerland makes gender equality a key component of its policy. The Swiss Agency for Development and Co-operation (SDC) established strategic lines and thematic priorities for 2015–18 and the Federal Department of Foreign Affairs (FDFA) formulated Switzerland's new position on gender equality in 2017 (Swiss Confederation, 2017). This position is aimed at promoting equal opportunities and women's rights in economic development to eliminate all forms of violence against women and girls and equal participation at all levels of social, economic and political decision-making processes. The country's commitment to promoting gender equality is being implemented through gender mainstreaming and cross-cutting themes in its programming, projects and strategies as well as through greater gender positioning in policy dialogue, gender visibility in political processes and international initiatives.

The SDC's strategic focus areas and thematic priorities for 2015–18 include gender equality and women's rights in conflict situations and fragile contexts; access to natural resources, training and income in rural economies and urban areas; and gender, participation and local governance. The FDFA's strategy on gender equality and women's rights defines the following six strategic objectives: Along with strengthening the economic empowerment and political participation of women, the strategy aims to combat all forms of gender-based violence. It also aims to strengthen women's rights with regard to their sexual and reproductive health and to make gender equality and women's rights a key component of all bilateral and multilateral activities. Lastly, it seeks to ensure equal opportunities for women and men within FDFA itself.

In 2015, the OECD Development Centre's Social Institutions and Gender Index (SIGI) received direct support from the SDC. Collaboration with UN Women as a strategic partner is being strengthened and co-operation with the MenEngage Global Alliance, which carries out work on gender equality led by and in co-operation with men, as well as with the UN Research Institute for Social Development (UNRISD) in the areas of gender equality, poverty and social policy, is also envisaged. The SDC's gender focal point plays an active role in international networks such as GENDERNET and the Learn4dev Network's Gender Expert Group.

WIEGO and economic empowerment

WIEGO's programme of work mainly targets poor working women engaged in the informal sector based on an empowerment livelihood approach (WIEGO, 2010). The network places emphasis on building the capacity of member-based organisations to influence national policy and regulatory frameworks in support of women's poverty reduction, income generation and sustainable livelihoods.

With reference to corporate objectives, core programmes include organisation and representation, statistics, law and the informal economy, and social protection and urban policies. WIEGO implemented a Global Trade Programme from 2006–16 which undertook research on the relationship between informal workers and global value chains (WIEGO, 2016). Programme goals covered global value chain analysis, ethical trade and informal workers, participation in the fair trade movement and building

capacity for change awareness. In addition, the programme addressed fair terms of trade for women engaged in global export markets. At corporate level, key thematic areas include Women's Economic Empowerment which focus on legal representation and collective bargaining for women engaged in the informal economy. There is also attention given to the development and improvement of sex-disaggregated statistics.

Priority is given to grassroots collaboration with member-based organisations whom are at the heart of WIEGO's research programme. At global level, WIEGO has been engaged in UN advocacy processes in connection to the United Nations Conference on Housing and Sustainable Urban Development (UN Habitat III). In this regard, WIEGO participated in a working group on the New Urban Agenda advocating for better recognition of the rights of informal traders and workers in urban spaces. WIEGO was also represented on the UN High-Level Panel on Women's Economic Empowerment, which took place in March 2017. Moreover, a number of funding partners are listed who are identified as major financial contributors including the Bill & Melinda Gates Foundation, the Ford Foundation, the Ministry of Foreign Affairs of the Netherlands, The Rockefeller Foundation and the Swedish International Development Co-operation Agency (SIDA).

THE GOVERNANCE NETWORK BETWEEN INDIVIDUALS

The promotion of productive and commercial activities of women in West Africa does not only depend on formal partnerships signed between states, non-governmental organisations and private and associated actors. Within each of the organisations active in this area, certain individuals are responsible for designing the programmes dedicated to gender, planning upcoming activities, seeking funding and monitoring the execution of business initiatives in the field. The efficiency of the governance network depends on the effort and co-ordination of those individuals, without whom the programmes and strategic frameworks related to women would be disconnected from the daily realities of West African women.

Reconstructing the governance network

Mapping the relationships between the individuals in charge of gender programmes requires a different approach than that used to analyse formal partnerships, the existence and content of which are generally public. In contrast, it is more difficult to know which individuals are effectively in charge of implementing these partnerships and how they communicate about their priorities. In the absence of a registry of professionals involved in the promotion of women in West Africa, the identification of actors in the governance network occurs using a relational approach, previously used for cross-border co-operation in the region (OECD/SWAC, 2017). This approach described in Box 5.1 maps the personal connections between members of the network in order to study its structure and constraints.

As with formal partnerships, governments represent one-third of actors in the governance network based on individual information exchanges (Table 5.2). Multi- and supranational organisations like ECOWAS, CILSS, the EU or the FAO represent one-quarter of the population of the network. Professional networks like WAWA, the Association of Women Lawyers of Côte d'Ivoire (AFJCI) or ROPPA are relatively less represented (12%) as are research organisations (10%) such as the Sahel Institute (INSAH), the Cape Verde Institute for Gender Equality and Equity (ICIEG) or the University of Abidjan. The share of other organisations, such as banks, foundations, NGOs and firms, does not surpass 10%.

Women are more highly represented (65%) than men in the governance network. This over-representation of women holds regardless of geographical location (Table 5.3). Map 5.1 depicts the West African countries in which development policies were analysed, the countries in which at least one organisation works in the realm of

Box 5.1
Methodology of the study

The study surveys the set of political decision makers and institutional specialists involved in public policies designed to support women entrepreneurs in West Africa. The study adopts the "snowball" sampling method described in Chapter 3. All of the countries in the region as well as all of the organisations with ties to a partnership in the domain of gender and economic activity in West Africa were included in the first wave of interviews. The individuals in charge of this policy area were contacted and then interviewed face to face, by telephone or through an online platform. In those interviews they were asked to name the people with whom they had exchanged information with respect to the promotion of women entrepreneurs in West Africa since 2016, and about the affiliations and geographical locations of these partners. Additional people were contacted based on the names that resulted from the first wave of interviews. This process permitted the construction of the information network linked to gender and the economy in the region.

The initial population of the study was made up of 57 people working explicitly in the area of promoting the economic activities of women in West Africa. This number is smaller than that of the organisations involved in partnerships in the region (101) because of difficulties encountered in precisely identifying the person in charge of women entrepreneurs within each organisation. Thirty-eight interviews were conducted between January and June 2018, producing a total of 187 unique names. The response rate of 67% (38/57) is smaller than standard rates in social network analysis, which recommend a threshold of 80–100% to minimise the number of missed relationships. The correlation between observed and real values in the network diminishes rapidly with missing data, in particular for certain types of centrality measures such as betweenness, that depend on a small number of brokers or eigenvector centrality, which measures the best-connected actors (Costenbader and Valente, 2003). In contrast to traditional surveys, in effect, social network analysis relies on statistically-dependent individuals that cannot be exchanged one for another. As a result, it is important not only to survey a large number but also to reconstruct the totality of their relationships. A response rate of less than 80% signifies that a part of the network cannot be reconstructed by the study.

The main challenge of the survey was identifying which actors were responsible for relevant organisations' strategies and operations related to women's economic activities in West Africa. It was difficult, and, in some cases, unclear which individuals had direct responsibility or the relevant experience to represent an organisations' policy interests on women's business activities. Targeting of individuals for the survey was primarily done on the assumption that most trade facilitation or promotion programmes as well as agricultural development activities in West Africa recognised the grossly unequal position of women entrepreneurs despite the key role of women in the region's food economy.

The first attempt at selecting individuals focused on ministers of women's affairs; directors of gender, population and social protection; gender officers, gender specialists, heads of units and divisions of trade and agricultural development as well as locally-elected women politicians. In many cases, individuals that were initially identified offered to refer the survey to others within their organisations who they felt had more specialised experience in West Africa and with women's commercial activities in particular. However, nominated actors did not always agree that their expertise was suitable or sufficient to represent their organisation on issues related to gender in West Africa and women's empowerment. This happened even when the official description of their position suggested responsibilities for programmes focused on trade and agricultural development in West Africa. ▶

► Similar to the past survey experience on cross-border co-operation (OECD/SWAC, 2017), there were also challenges with obtaining contact details for some targeted actors and arranging face-to-face or phone interviews. Targeted actors worked in organisations that were widely distributed across West Africa and Europe and these individuals were often highly mobile due to frequent work trips and heavy event schedules. In view of these factors as well as the cost implications of in-person interviews, individuals were given the option to participate in the survey using an online platform for surveys and data collection. Where possible, phone interviews followed up the electronic completion of the survey.

women's economic promotion was contacted, as well as the number actors attached to the governance network as determined by the interviews. Nearly three-quarters of the actors in the network (73%) come from West Africa. Because of the connection between West African politics and the programmes of international partners, one-fifth of the actors are located in Europe (19%) and 5% in North America.

From a sectoral perspective, the production and processing of agricultural products are the areas most frequently supported by the organisations for which the people surveyed work, including the strengthening of co-operatives, fisheries and mills owned by women (Figure 5.4). Outside of these areas directly focused on economic activities, the organisations studied also focus on promoting the representation of women in local and national decision-making spheres, education and civil society. The downstream segments of value chains, like consumption, nutrition, distribution and transport, are considered secondary.

A fragmented governance network

Notwithstanding the co-ordinating efforts of states and their partners, the network of governance related to the promotion of West African women entrepreneurs remains fragmented into several segments. The main section of the network, shown at the centre of Figure 5.5, is made up of 114 actors, 70 of whom are women and 44 men, which represents

Table 5.2
Network composition by organisation type

Type	Number	Percentage
Governments	57	30
Multinational and supranational organisations	46	25
Professional networks	23	12
Research	19	10
Non-governmental organisations	14	7
Banks and foundations	12	6
Others	12	6
Private businesses	4	2
Total	**187**	**100**

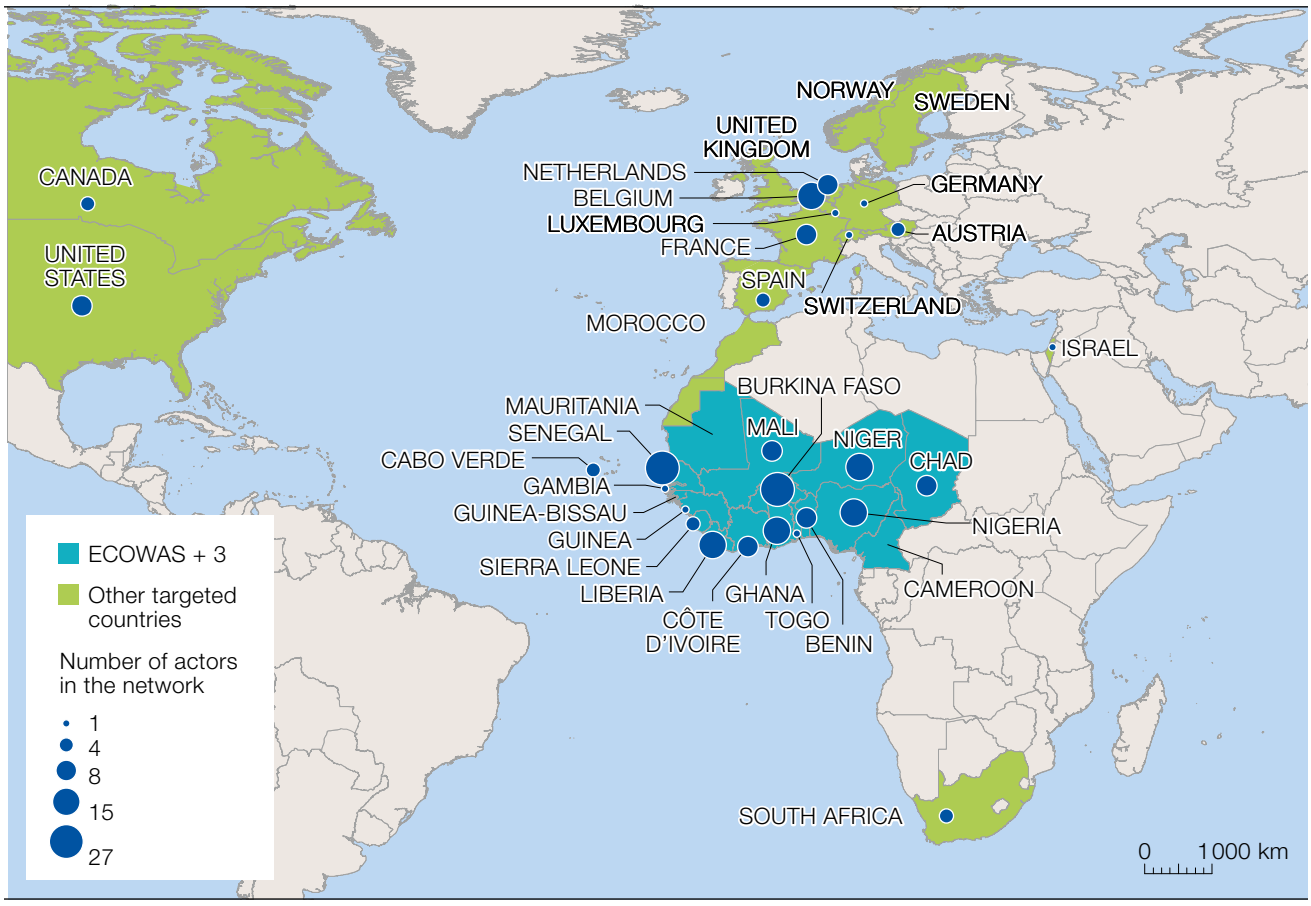
Table 5.3

Population of the governance network by gender and continent

	Women		Men		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Africa	90	63.8	51	36.2	141	100.0
Europe	25	71.4	10	28.6	35	100.0
North America	6	60.0	4	40.0	10	100.0
Others	1	100.0	0	0.0	1	100.0
Total	**122**	**65.2**	**65**	**34.8**	**187**	**100.0**

Map 5.1

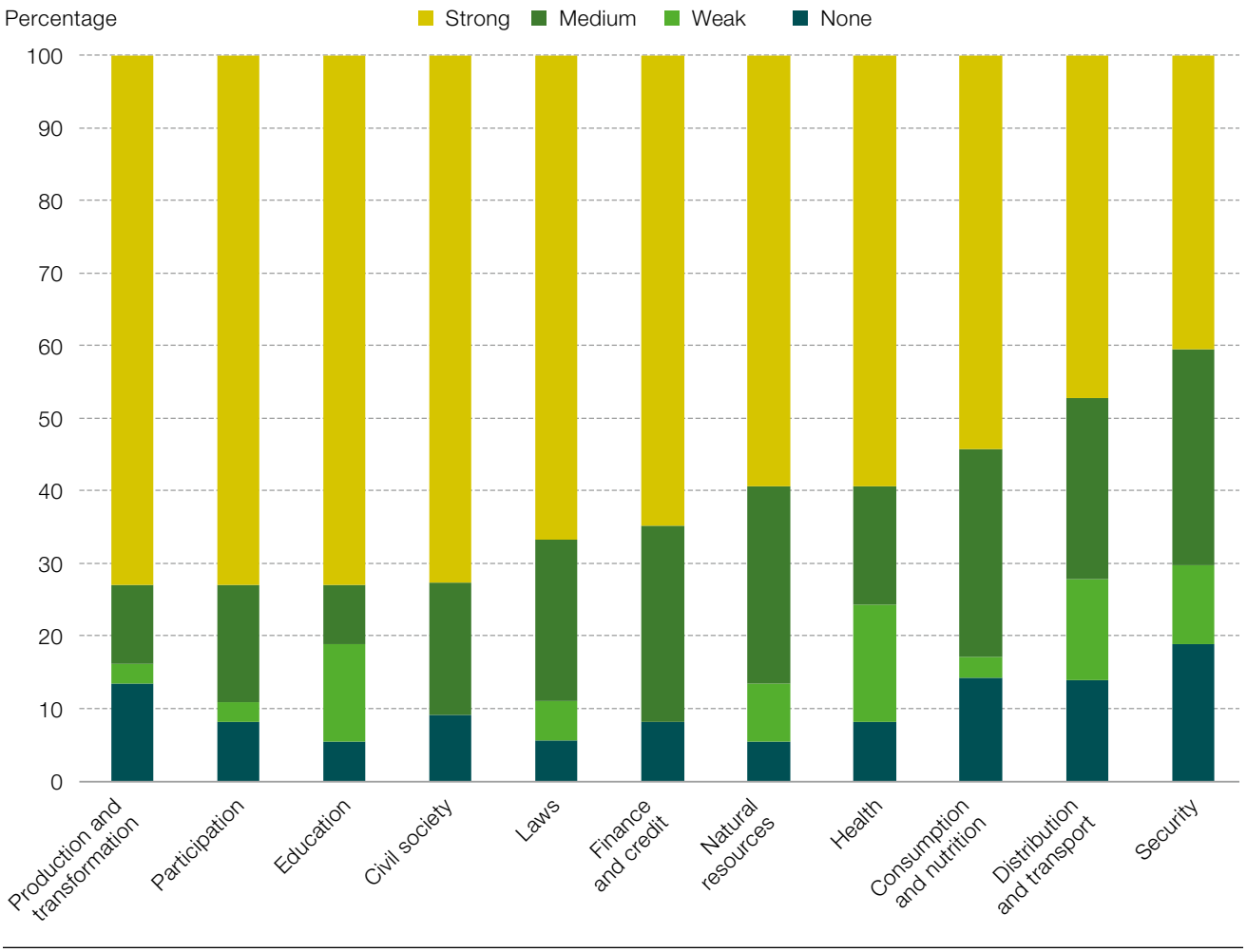
Countries studied and number of actors in the governance network



only 61% of the actors in the network. Almost one-in-four actors is disconnected from this main group. The peripheral actors form two groups of two actors (dyads), two groups of three actors (triads) and eight larger sub-groups. One actor does not have any links to the network at all (number 37 at the left of the sociogram).

The network is made up of more than 180 political decision makers and gender

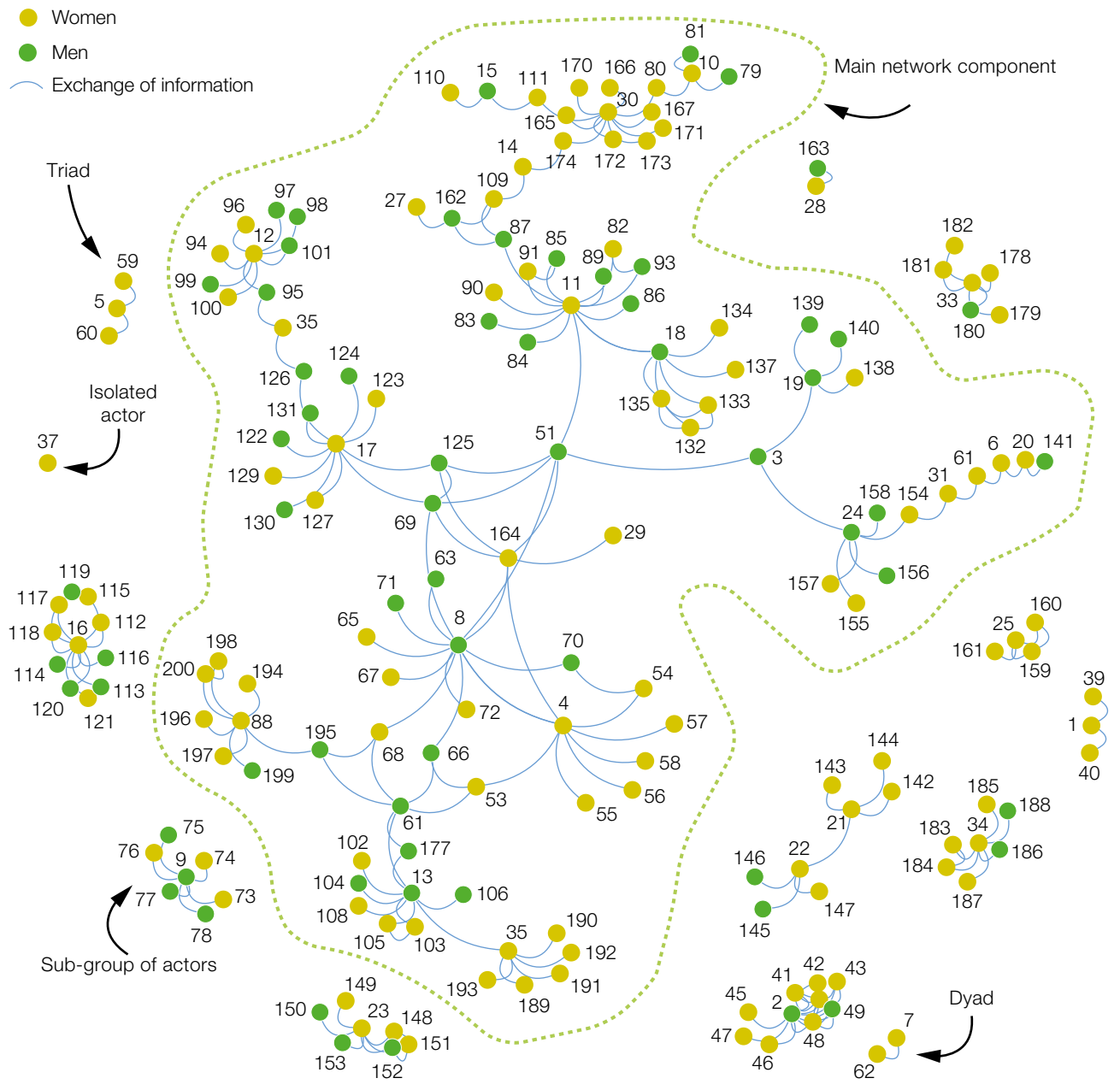
Figure 5.4
Focus of public policies supporting women



specialists for the most part situated in West Africa and Europe. It is structured such that actors are spread across small communities where it is generally easy to pass from one to the other in few steps. These properties are typical of random networks, which is confirmed by the particularly weak agglomeration co-efficient (0.081) and by the low average degree of separation (1.7) (Table 5.4). From this perspective, the gender governance network differs structurally from the recently studied cross-border co-operation network, which has a weak agglomeration co-efficient and long paths between actors (OECD/SWAC, 2017). The cross-border co-operation network is of similar size (164 actors) to the gender governance network but its density is doubled.

In the less dense gender governance network, none of the actors has an exceptional number of connections or plays a particularly important intermediary role, as confirmed by the very weak values for degree centralisation (0.029) and betweenness centralisation (0.002). Only eigenvector centralisation, which provides information on the presence of actors well-connected to the most central actors, is relatively significant. This is because of the general architecture of the network, in which the several sub-groups of actors are disconnected from the centre. In this configuration, the eigenvector centrality of actors in the main group is significantly larger than other actors because they have access to a greater number of connections (Figure 5.6).

Figure 5.5
Information exchange network by gender



Note: Each circle represents an individual actor and the colour indicates their gender.

This degree of network fragmentation is not due to either a strict division between men and women nor to geographical barriers between actors located in Africa and the rest of the world. To the contrary, the network appears to be remarkably well-integrated by gender and origin. Like the rice trade network studied in Chapter 4, the impact of divisions based on gender and country can be measured using the concept of homophily, which stipulates that exchanges of information are more likely between actors that share characteristics in common than more dissimilar actors. A homophilous network is a structure where men or women preferentially exchange information with partners of the same sex or origin.

Table 5.4
Principal indicators of the gender governance network

Measure	Definition	Valeur
Number of nodes		187
Number of ties		209
Density	Percentage of existing ties in the network compared to potential ties	1.2%
Average degree	Number of ties per actor	2.2
Agglomeration co-efficient	Tendancy to form a network from a single component	0.081
Average path length	Number of separations between the actors of the network	1.7
Degree centralisation	Presence of actors with an exceptional number of ties	0.029
Betweenness centralisation	Presence of actors connecting sub-parts of the network	0.002
Eigenvector centralisation	Presence of actors well-connected to the most central actors	0.378

A heterophilous network, by contrast, is characterised by an abundance of links between men and women and between countries or continents.

The homophily values for gender and geographic location are much smaller than 50%, which signifies that information exchange related to gender transcends these divisions (Table 5.5). The Exernal/Internal (E/I) Index calculated based on gender and continent confirms this result. This index approaches -1 if actors tend to exchange information exclusively within their own group or country (homophily) and approaches +1 if their relationships systematically transcend social and geographic divisions (heterophily). The values in this network are close to 0 for both measures, which suggests an absence of homophily between women and men and between continents.

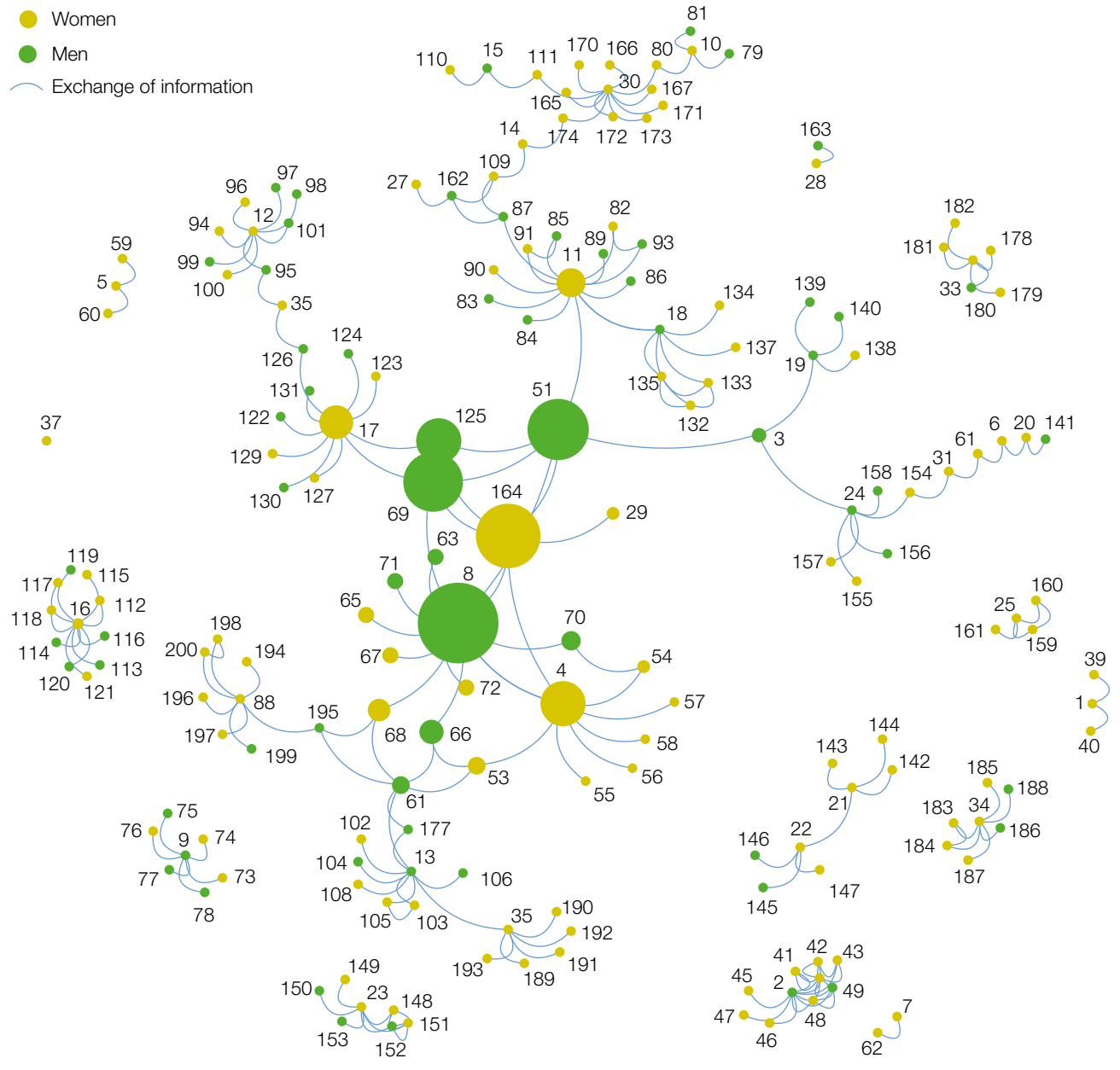
What structure for the governance of women's entrepreneurship in West Africa?

The absence of homophily based on gender and geographical origin of actors suggests that other factors must explain the fragmentation of the governance network related to women entrepreneurs in West Africa.

It is undeniable that the lack of network cohesion is due in part to the lower number of actors that were surveyed. If, with more than 180 actors, the interviews were able to identify most people involved in the network, numerous interpersonal relationships are still missing. In contrast to typical approaches that rely on a representative sample population, social network analysis is dependent on the individual responses obtained in the course of interviews. The absence of a central actor cannot be determined except through numerous other interviews with people to whom they are linked. In conclusion, there is no doubt that a higher response rate would have provided a more precise picture of the gender governance network and the constraints imposed on actors.

Without minimising the limitations of this study of individuals responsible for gender policy in West Africa, it appears as though the current governance network is unlikely to encourage the co-ordination of programmes destined to supporting women entrepreneurs in the region. Its random structure and the absence of major intermediaries, as demonstrated by social network analysis, are the most problematic characteristics. The complexity of development policies implemented at the regional scale depends on actors capable of

Figure 5.6
Eigenvector centrality in the gender governance network



Note: Each circle represents a single actor and is coloured according to gender. The size of the circles is proportionate to how well-connected the actors are to central actors (eigenvector centrality).

co-ordinating the multiple state and partner programmes. This co-ordination requires a dense and decentralised structure in order to connect actors to institutional resources, financial backing and diverse geographical scales.

A very centralised structure, like a star network, in which all organisations preferentially communicate with a central organisation, would not be well-suited to the co-ordination of development policies. These still rely heavily on national programmes and must result from international consensus, which doesn't work well with strong centralisation. As in the field of cross-border co-operation, the most important actors in a governance network are often those that manage to reconcile divergent

Table 5.5
Homophily of actors in the governance network by gender and continent

	Homophily Percentage of ties maintained within each group	**E/I Index** Tendency to exchange information outside of one's group (varies from +1 to -1)
Gender		
Women	22	-0.10
Men	17	-0.04
Entire network	20	-0.08
Geographic location		
Africa	15	-0.02
Europe	34	-0.23
North America, Middle East	18	0.18
Entire network	19	-0.05

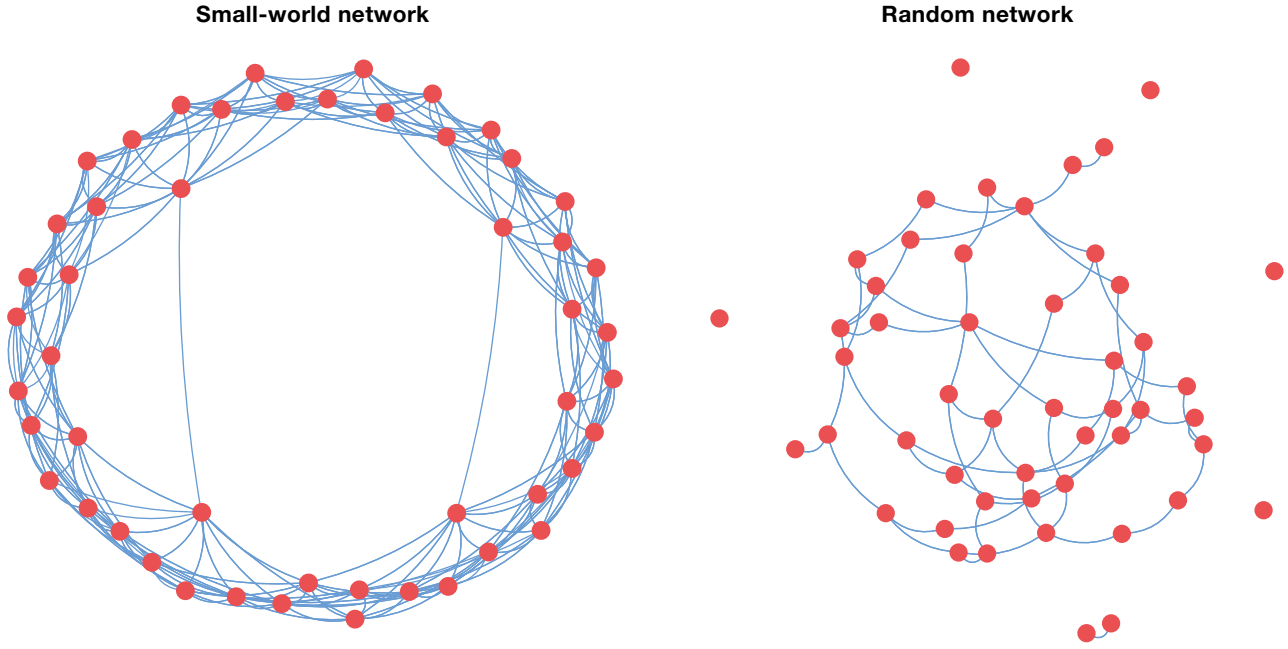
regional political objectives rather than seeking dominant positions (Walther and Reitel, 2013; OECD/SWAC, 2017).

Considering these constraints, a structure that might be more effectively adapted to disseminating policies to support women entrepreneurs in West Africa is the "small-world" network, so named because it allows numerous communities of actors to communicate with one another through a small number of steps (Watts and Strogatz, 1998). As Figure 5.7 shows, a small-world network combines a strong agglomeration co-efficient with short routes between actors, in contrast to random networks, like that of gender in West Africa, where actors do not form dense communities. Shifting from a random to a small-world network structure requires not only a reinforcement of the internal relations within existing communities, but also the creation of links between distant communities of interest transcending organisational and geographical boundaries.

This objective raises the question how well gender is considered, included, integrated or mainstreamed into policies and programmes related to economics activities in West Africa. The process of examining the institutional landscape using a relational approach has raised some questions about how "gendered thinking" informs policymaking in West Africa. For many years, gender equality and women's empowerment have been critical goals for several bilateral aid agencies, state ministries and development organisations working in West Africa. However, the critical analysis, knowledge and advocacy that could lead to transformative outcomes for West African women seem to be highly specialised in these organisations. In some cases, organisational gender strategies seem so specialised that only a limited number of individuals can communicate or advocate for actions that could promote women's empowerment.

Instead of a broad diffusion of women's issues, perspectives and gender equality goals across organisations, there appears to be either a narrow focus on specific "women-facing interventions" or women's issues being "sprinkled" in development initiatives, but at the same time pigeonholed, in the name of gender mainstreaming. Despite the focus of various organisational gender strategies on achieving gender equality and the empowerment of women and girls, gender-sensitive research and the critical knowledge of the gender-differentiated impacts of policies and programmes appear to

Figure 5.7
Small-world and random networks of 50 actors



still be niche areas and a step removed from the "hard areas" of macroeconomics, agricultural development and poverty reduction. In this context, structural issues not only remain on the side of longstanding problems with gender inequality and the power imbalances between men and women, but also in terms of institutional ownership and advocacy within the very governance networks that exist to promote women's economic interests in West Africa.

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Chapter 6

Obstacles and perspectives

Obstacles to women's economic activities 126
Women's networks and commercial activities: Perspectives 138

Chapter 6 analyses the functional and institutional obstacles encountered by West African entrepreneurs. It presents two points of view: that of the actors in the rice value chain between Benin, Niger and Nigeria, and that of the decision makers that form the governance network linked to the economic promotion of women in the region. According to actors in the supply chain, illegal payments demanded at the border and excessive or unjust taxes are the largest obstacles that constrain commercial activities. Local entrepreneurs want more investment in the physical infrastructure of markets, transportation and policies to ease access to credit. Women are proportionally more likely to complain about the poor condition or lack of commercial infrastructure than men. From the perspective of policy makers and gender specialists, the principal obstacles arrayed against women entrepreneurs relate to education, financial services, cultural norms, property and the judicial system. This chapter presents four strategies based on social networks that could help accelerate social change and increase the effectiveness of organisations, two areas that are particularly relevant to the women entrepreneurs of West Africa.

Key messages

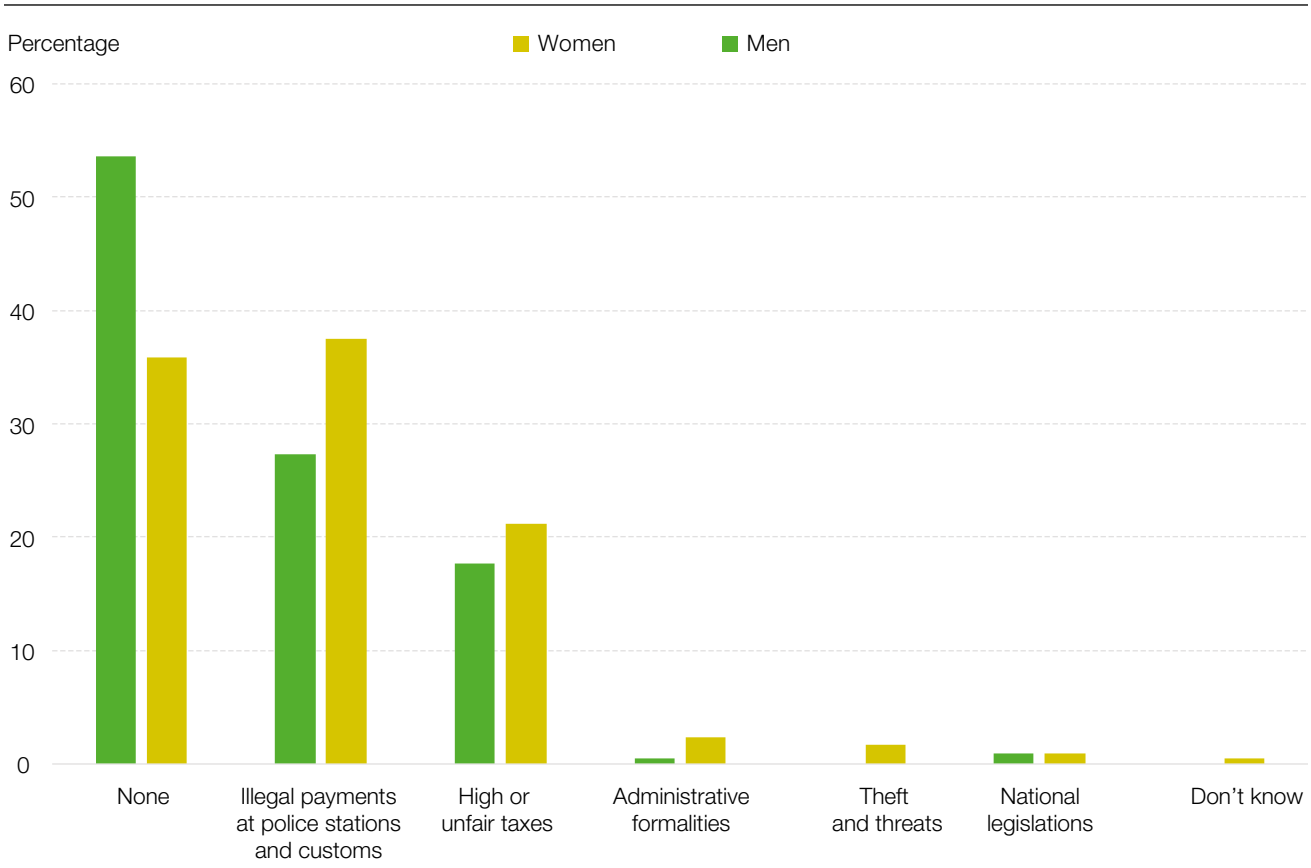
- Security concerns do not significantly constrain trade in the Dendi, in contrast with parts of the Niger-Nigerian border where markets have closed or relocated.
- The main difficulty for women in regional trade is transcending certain social and geographical limitations in order to establish a client base that is not just linked to kinship or community. Policies should encourage the development of this type of social capital.
- The implementation of affirmative action measures is considered by many officials as a lever for accelerating social change.
- Organisations should strengthen the links that exist between their experts on gender and economic issues.

OBSTACLES TO WOMEN'S ECONOMIC ACTIVITIES

West African women encounter numerous obstacles in their productive and trading activities. These are obstacles of a functional nature when they impact physical access to property and market or institutional nature when they relate to laws, customs and policies that regulate the economy (Chapter 1). In the food sector, for example, the activities of numerous women are constrained by a lack of access to agricultural inputs, to effective means of transportation or to markets adapted to their needs. In the institutional sphere, women also encounter numerous judicial and customary obstacles that limit their productive and commercial potential (Chapter 2). These barriers tend to reinforce existing gender inequalities and relegate women entrepreneurs to structurally peripheral roles in networks such as the agricultural value chain studied in this report.

To understand the extent of these functional and institutional barriers, two points of view are presented: that of women and men working in the rice sector, and that of the decision makers who figure within the regional governance network related to the advancement of women entrepreneurs. In the course of studies conducted in Benin, Niger and Nigeria (Chapter 4), entrepreneurs in the rice value

Figure 6.1
Obstacles characterising the cross-border rice trade



chain were asked to identify the factors that limited their exchanges across borders as well as investments that could improve trade infrastructure in the region. These results were compared to those given by policy makers and gender specialists interviewed at the regional level (Chapter 5) who were asked to discuss the financial and institutional obstacles that have the greatest impact on limiting the economic activities of West African women.

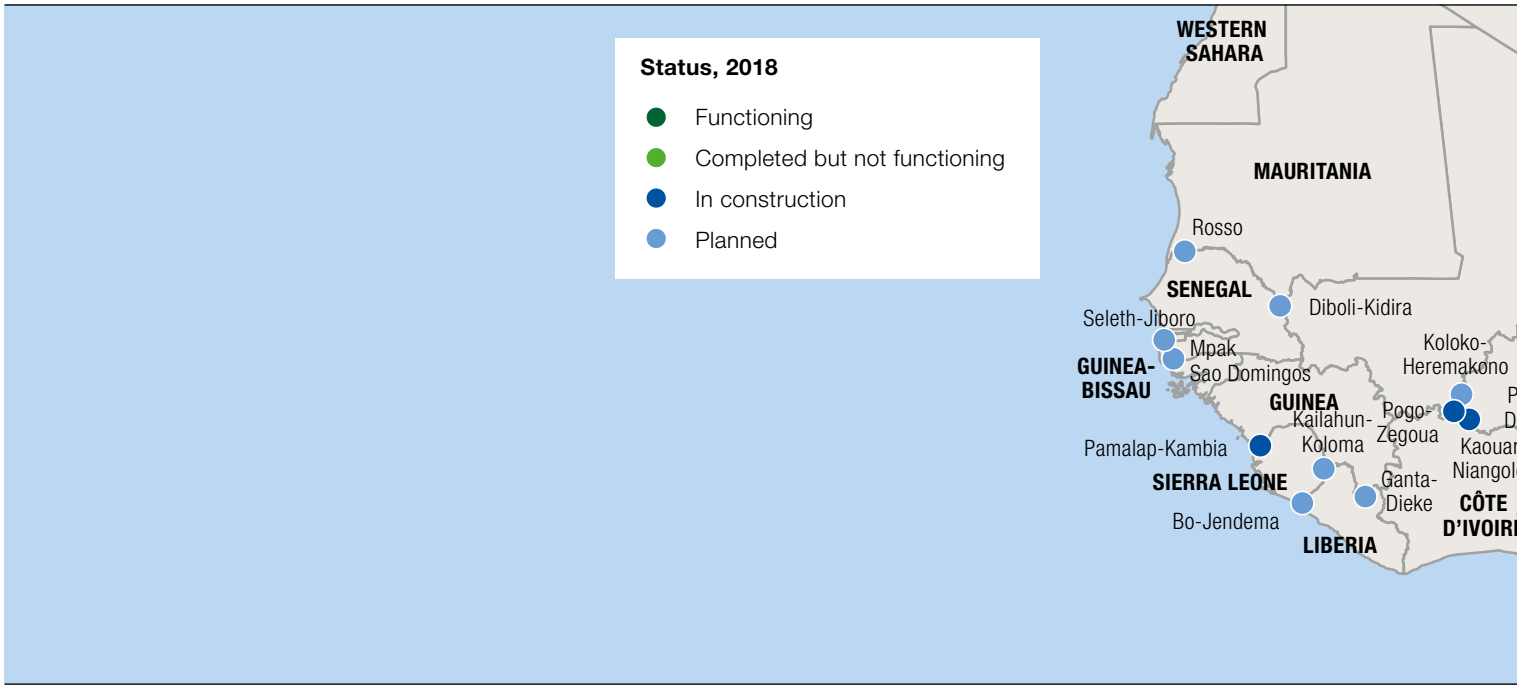
Illegal payments slow cross-border trade

Rice trade in the Dendi remains an endeavour fraught with obstacles. Among the 638 entrepreneurs from the region that regularly crossed the borders, nearly 6 out of 10 (58%) mentioned that their economic efforts were hampered by diverse obstacles (Figure 6.1). Men were proportionally more numerous in reporting obstacles (64%) than women (46%). This difference cannot be explained by their propensity to cross borders, which was generally similar across the sexes (20%).

Illegal payments demanded by various law enforcement agents at border posts were the most frequently cited obstacle. Nearly one-third of women and 40% of men indicated that these payments limited their commercial activities. Border posts are notorious for enabling informal arrangements between government officials and private actors. They encourage several corrupt practices from extracting bribes for border passage from small traders to clientelist relationships with larger vendors and merchants active in import-export activities. These practices are even more constraining for traders for whom these formalities must be repeated with different officials at different parts of their journeys.

One-stop border posts put in place by regional organisations since 2010 were meant

Map 6.1
One-stop border posts in West Africa, 2018



Source: Map adapted from OECD/SWAC 2019b

to reduce the potential for illegal relationships between government officials and private actors (OECD/SWAC, 2019b). Sub-Saharan Africa contains 59 of these posts, with considerable variation in degree of implementation and configuration. In West Africa these infrastructures are generally unilateral stations where the government offices are localised in one or the other of the countries, as opposed to juxtaposed posts where border controls are exercised in one of the two countries depending on direction of travel, or straddling posts that sit astride the border (Map 6.1).

The Gaya-Malanville post, for example, was constructed on the site of the old Malanville market, on the Beninois side of the Niger River (Figure 6.2). Inaugurated in 2014, this post did not become operational until 2018 due to financial interests that the effective operation of these controls could have brought into question. In order to reduce wait times at borders, the plan is to harmonise and make police and customs procedures more transparent between Benin and Niger, to stop the under-registration of merchandise and informal relations. Facilitating commerce will also render obsolete certain investments on the Nigerien side that were made in response to truckers stalled at the border, sometimes for days, with their shipments.

In addition to illegal payments, one-fifth of merchants crossing the Dendi's borders mention "excessive or unfair" taxes as an obstacle to their activities. Men are slightly more concerned (21%) than women by this barrier (18%). Taxation of international products is more contested by the riparian populations of the Niger River who engage in short-distance trade than by major regional operators. In the Dendi, as in other West African border regions, many small traders whose primary income depends on their ability to route agricultural or manufactured products to one side or the other of the border share the opinion that post-colonial borders are a hindrance to local trade.

Taxes levied on certain products consumed in the region are perceived as artificial by the actors surveyed because they apply to flows between neighbouring populations. Although the taxation of agricultural and manufactured products may threaten the professional activity



of the smallest entrepreneurs or encourage them to illegality, flows observed at the borders of Benin and Niger are out of proportion to local demand (Chapter 4). The authorities are not only dealing with small local producers responding to the demand of border towns; they must also regulate several thousand merchants engaged in international trade. The example of rice shows how, from this perspective, a seemingly peripheral region like the Dendi is in fact strongly connected to the large markets of north-western Nigeria.

Other obstacles mentioned by actors in the rice value chain play a marginal role in the commercial exchanges of the region. Interviews confirm that security concerns are not significant limiters of trade in the Dendi, in contrast with parts of the Niger-Nigerian border around Lake Chad where political insecurity linked with religious extremism has led to the closure or relocation of markets (van den Hoek, 2017). There were no significant differences between men and women in this area, nor in the areas of administrative barriers and national legislation.

Improve access to markets, transportation and credit

Entrepreneurs in the Dendi have a very clear idea of what the states and their partners could do to improve markets in the region (Figure 6.3). Their primary concern is the physical infrastructure of the markets, which were perceived by more than one-third of respondents as poorly adapted to the needs of modern commerce. Women (46%) were proportionally more likely to mention the disrepair or lack of commercial infrastructure than men (31%). This difference is not surprising given that women entrepreneurs frequently ply their trade on the ground, without sanitary systems or protection against the sun. Those interviewed also wanted more investment in the management of trade. They particularly decried a lack of warehousing facilities that would allow them to store merchandise awaiting delivery to wholesalers or an increase in prices on regional markets. Interviewees also noted the lack of storefront space, which would allow them to better display and sell their products.

Figure 6.2
Border post, Malanville in 2013



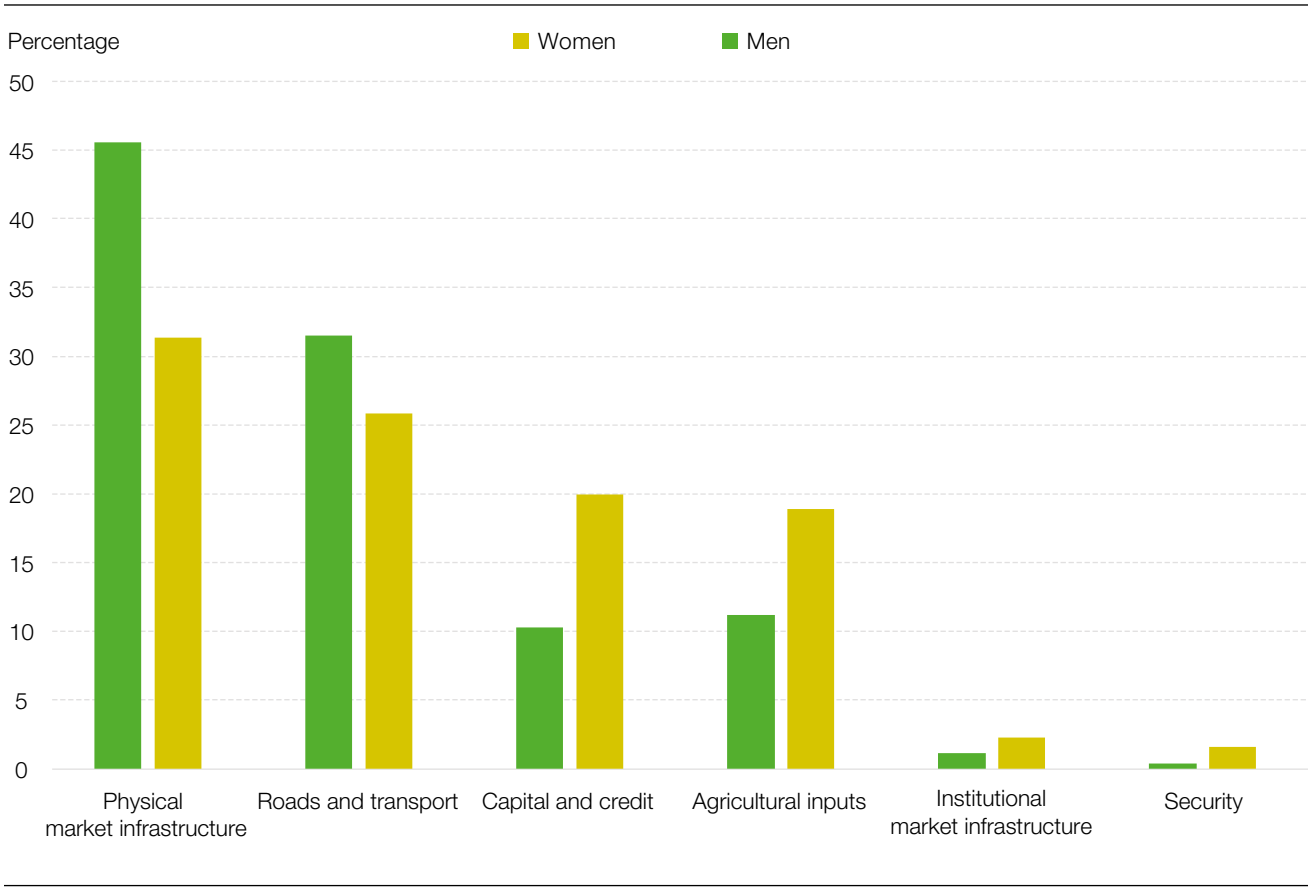
Note: The new market adjoins the border post in the northwest of the image.
Source: Google Maps, 6 January 2014

Rural markets in the border region run seven days a week similar to those to the north of Benue, on the Niger River bend and of Mande, in southern Ghana and Senegal (Walther, 2008). Large urban markets operate daily in order to serve the local population but are particularly busy one or two days of the week. In the Dendi, the "market days" are Tuesday in Gaya, from Friday to Sunday in Malanville and Sunday in Kamba. The cycle of these markets, product of negotiations between traditional and administrative authorities, supports the interaction between producers, intermediaries and consumers. The market rotation, however, requires infrastructure that can accommodate large crowds over short periods of time. Certain towns see their populations increase exponentially on market days, which is not without logistical challenges.

None of the Dendi markets adequately responded to the needs of vendors at the time of the interviews. Women, in particular, did not find that arrangements effectively facilitated the sale of their products, the care of their children or responded to their security or hygienic needs. Rebuilt after a fire in 1992, the interior of the Gaya market lacks functionality: its concrete structures are not well-suited to local needs and are disregarded or abused by users. Certain internal passages in the market have been gradually invaded by sellers, impeding the circulation of buyers, while the eastern side of the market has few entrances to permit visitors to access shops. The town market also overflows its official boundaries into neighbouring streets. On Friday and Saturday nights its surroundings are busy with intense economic activity. Carts and trucks convey the products purchased by Nigerien wholesalers to the Malanville market and the cargo is then shipped to destinations in the interior of Nigeria. Other traders prefer to deliver their grains from the Gaya market by canoe to Malanville, a particularly economical mode of delivery. In this case, the fluvial shippers deal with both transportation and customs negotiations (Walther, 2008).

The situation is markedly different in Malanville where a large part of the market was destroyed to make way for a customs post. The market shifted further west and was rehabilitated by the Swiss Agency for Development and Co-operation (SDC, 2017) (Figure 6.2). These improvements should enhance the regional potential of the market by developing sales and storage spaces protected from bad weather as well as service, sanitation and roads that can adequately serve the intense weekly market attendance. At the time of the surveys (2017–18), however, the work supported by external

Figure 6.3
Which investments could improve access to markets?



funding had not been fully completed and many women traders continue to work along the main streets, under unsatisfactory sanitary conditions.

Road infrastructure is a second area of stress for local entrepreneurs. One-third of women and one-quarter of men remarked that their activities were slowed by a lack of roads or because of the degraded state of existing axes. The Dendi region is located at a strategic crossroads of the Nigerien National Route (RN7) stretching from Niamey to the east of Niger, of the principal Kebbi road axis leading to Sokoto and the national interstate (RNIE2) that crosses Benin to the Gulf of Guinea. Despite this theoretically privileged position, the Dendi has an underdeveloped and rapidly deteriorating road system (Map 6.2). Low average vehicular speeds in the region and the persistence of long delays at the border reduce the theoretical population base that the regional markets could attract by about one-third (OECD/SWAC, 2019b).

The isolation of the Dendi regions far from the Cotonou-Malanville axis dates to the colonial era. By making Malanville the staging point for imports destined to the isolated territories of French Sudan, the colonial administration broke with older commercial logics dominated by exchanges along the Niger River valley and by routes linking Hausa territories in the east to the Ashanti in the southwest. Malanville and Gaya became international crossroads whereas the riparian communities entered a period of pronounced isolation. The density and quality of contemporary road infrastructure reflects this orientation and favours international flows to the detriment of the local economy (Map 6.2).

- In Niger, accessibility to Gaya is currently constrained by the deterioration of RN7, which links the city to Dosso, and by the abandonment of improvement projects

along the road to the Beninois border. Further north, the section of road leading to Kamba has been in an advanced state of deterioration for several years. Better road conditions would allow people to travel to the urban region of Sokoto and to the Nigerian towns in the Niger River valley in under three hours using the new paved road linking Malanville to Illo.

- In Benin, Malanville would benefit enormously from an opening of Nigerian borders, which would permit traders to reach the large markets of Jega and Sokoto in under four hours of driving. This driving time could also allow access to Niamey, the capital of Niger situated 300 kilometres to the northwest. The paved Malanville-Illo axis should improve the accessibility of the Beninois bank and reconcile two territorial logics that have for a long time been disconnected: those of north-south international flows and the east-west flows of local production. This should reinforce the centrality of Malanville, whose role is precisely to serve as an anchor for these two dynamics.
- In Nigeria, the isolation of markets is partially mitigated by the density of the road network, which is much higher than anywhere else in West Africa. However, the state of local infrastructure is often quite bad in the State of Kebbi. The road that links Kamba to Gaya shows the low level of interest accorded to certain strategic road sections from a perspective of external exchange. Although plans to completely reconstruct the road were announced since the 2000s, there has been no tangible sign of rehabilitation. This road is, however, a primary route for long-distance trade in this part of the border region. An improvement of connections with neighbouring countries would grow Kamba's population base towards Kandi in Benin, which would be accessible in fewer than two hours, and towards the agglomeration of Niamey, which would be accessible in less than 3 hours and 30 minutes without a wait at the border (OECD/SWAC, 2019b).

The third sector in which Dendi entrepreneurs would like more investment from governments and their partners is in the area of financial services. One in ten women and one in five men report that their economic activities are constrained by limited access to capital and credit. Because it does not require extensive processing, most of the value added of the rice sector depends on merchants' ability to centralise and store their merchandise pending the most favourable period for sale. These accumulation strategies require means of transport (trucks) and storage (warehouses) inaccessible to economic operators who do not have access to credit.

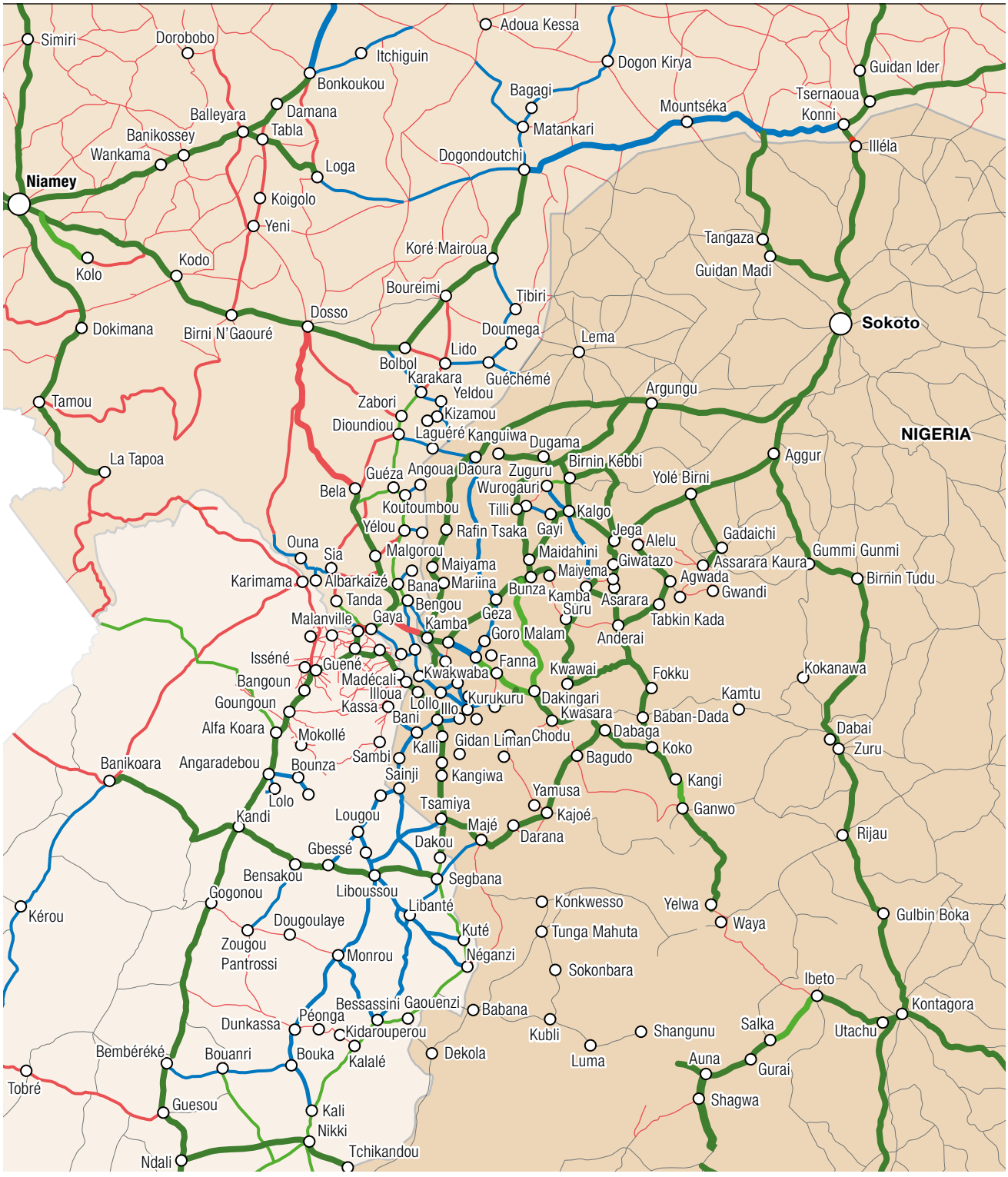
As for production, irrigated rice cultivation involves acquiring small motor pumps and drilling wells to reach the water table in plots that are not located near the river. In order to facilitate access to this equipment, the Niger banks of the Dendi have benefited from a microfinance program supported by the World Bank (Jaubert et al., 2012). Awarded to the Nigerien Association for the Promotion of Private Irrigation (ANPIP) beginning in 2003, this programme contributes to the development of irrigation in the region but cannot meet the demand for financial services of all producers and traders in the tri-national region.

Access to quality agricultural inputs is another obstacle to the development of the rice sector. Men are proportionally more likely (19%) than women (11%) to express a need for fertilizers, crop protection products, improved seeds and oil to power motor pumps. They note that these inputs are essential for increasing the yields of their plots, ranging from 7.5 tonnes per hectare of paddy rice under optimal irrigation and input use to 1.5 tonnes per hectare in the event of malfunctions in irrigated zones (Walther, 2008). The use of agricultural fertilizers is particularly widespread in Nigeria, where its sale is subsidised without having major effects on national productivity (Takeshima and Liverpool-Tasie, 2015).

Since 2008, West African rice-growers receive regular allotments of subsidised fertilisers. In some cases, as in Benin, government departments distribute enhanced seeds free of charge. The creation of new public cereal stocks (Ghana, Nigeria), and the introduction of purchasing schemes that favour producers (Mali, Niger), marks a change in the strategy

Map 6.2

The state of the Dendi road network



Source: Lawali Dambo, University of Niamey

towards public intervention, which now aims to steer the market (Box 6.1). In Côte d'Ivoire, where rice production has doubled in less than four years, government policies have been credited with increasing the availability of land and water resources for rice production while improving the regulatory environment for private sector engagement on enhanced financial services and input markets (CARD, 2014). In Nigeria, high profile policy measures such as the Presidential Initiative on Fertilizers and the Growth Enhancement Support Scheme have demonstrated strong political will towards public investment on domestic staple production as part of a wider strategy for enhanced national food security. In addition, Mali's strong performance in local production has contributed to relative self-sufficiency in rice consumption as 89% of total rice consumed in Mali comes from from local production, compared to 50% and 17% in Niger and Benin respectively (SOS FAIM, 2017).

Obstacles to the economic activity of women

According to the policy makers and gender specialists interviewed, the most significant obstacles limiting the professional activity of women entrepreneurs in West Africa are related to education, financial services, cultural norms, real estate and the judicial system. These factors largely parallel those discussed in the review of literature about women and economic development in the region (Chapter 2).

- *Education*. The lack of training and coaching is widely recognised as a limit on women's activities, especially in handicrafts, where women are very well represented. "Lack of education is the biggest human constraint on economic activities, especially for women," notes the head of an international agency based in Niamey (Interview 12, 2018). In the rice sector, for example, the levels of training completed are out of all proportion to the requirements of modern trade. Nearly 65% of the women in the network have never been to formal or Koranic school compared to only 8% of men. The gender gap in education and formal experience translates into profound income inequality.
- *Finance*. Access to financial services is another limiting factor on the economic activity of women. Interviews showed that this factor should be a higher priority for public policy. According to a gender councillor in an international organisation that had done some studies of women traders in Accra and Abidjan, "it's very difficult for women to build anything that is viable... Their earnings are immediately reinvested into paying back their debts and then buying new materials in order to keep their business running and they are just barely getting by. [They are] just scraping by and it never ends somehow" (Interview 4, 2018).

  Those interviewed complained that initiatives in the area of finance in West Africa are not always well-adapted to the needs of women entrepreneurs. "Assistance towards women in business is largely restricted to micro-finance" stated a gender co-ordinator of a West African ministry (Interview 33, 2018). They also noted that traditional financial institutions do not have many instruments that would allow women to access liquidity. As this director of gender in an African regional organisation stated, "the insufficiency of financial institutions that have credit systems adapted to the needs and especially to the constraints that women face remains problematic" (Interview 31, 2018).
- *Culture*. According to those interviewed, the access of women to markets is often limited by cultural elements. These are related on one hand to norms that encourage early marriage, polygamy and large families, and, on the other hand, to restrictions that affect the mobility of women and their access to markets and other public places. In Niger, for example, the director of a North American aid organisation noted that "the principal obstacles are cultural, not institutional or legal. In the villages, the mobility of women and their access to markets is very limited" because social norms encourage women to stay close to home (Interview 17, 2018). In the domain of international trade, the main difficulty for women is transcending certain social and geographical limitations in order to establish a client base that is not

Box 6.1
Regional strategies for the rice sector

Rice sector reform in West Africa is to a large extend influenced by policy frameworks relating to agro-commercialisation and market growth which have enhanced regional food security through improved seeds and inputs and increasing focus on value chain development. Evidence supports the view that urban consumers in Africa are willing to patronise domestic rice markets depending on improved quality including product marketing and packaging (Demont and Ndour, 2014). Large public investment is required to support modern processing infrastructure and enhanced horizontal and vertical integration amongst value chain actors. Whereas the 1990s saw the public sector disengage from rice-growing sectors, the region is now witnessing a massive return of state-intervention to all stages of the value chain.

Numerous governments in the region including Nigeria, Senegal, Ghana and Mali have embarked on national rice development strategies that promote self-sufficiency in rice production, support rice producers through the promotion of improved seeds, fertilizers and credit, and invest in modern technologies for rice harvesting and processing disseminated via producer organisation networks. The ambitious strategy for rice self-sufficiency for Africa is the overarching mandate for the Coalition for African Rice Development (CARD) launched in 2018 with the target of doubling rice production in 10 years. CARD works with African governments to develop and implement National Rice Development Strategies (NRDs) based on an approach to reduce rice import dependency. The coalition has supported the implementation of such strategies focused on targets to improve productivity and stimulate local rice markets in support of further regional integration. Following the implementation of NRDs, a series of best practices have emerged at national level showcasing successful reform.

Progress achieved under the umbrella of CARD and in partnership with development agencies such as the Alliance for a Green Revolution in Africa (AGRA) have consolidated arguments around the importance of pro-business reforms for rice sector development anchored on the diffusion of productive technologies such as enhanced seed variants and increased fertiliser based on the experience of Asia's Green Revolution of the 1970s. This policy framework for promoting local rice production takes into account rice imports. Customs duties on rice imports have remained relatively high since the peak of the 2007–08 food crisis, although this has done little to significantly undermine consumer demand or alternatively improve the market competitiveness of local rice products.

just linked to kinship or their locality. This freedom of movement varies considerably by ethnic origin and milieu (urban or rural). In Mali, for example, Bamako concentrates more than 9 out of 10 trades held by women in the country, a situation which is explained in particular by the facilities offered by the capital in terms of transport and customs formalities (OECD/SWAC, 2019a).

- *Real estate*. The impossibility of legally accessing real estate or the ability to use it as collateral is a limiting factor for women's entrepreneurship. As this project leader based in Switzerland observed, "many women in West Africa lack access to land and do not have land titles they could use as collateral to access financial services such as credits and insurances that would help raising their production and productivity" (Interview 3, 2018). Inspired by reading *The Mystery of Capital* by de Soto (2000), people interviewed noted that access to private property is one of the fundamental conditions for capitalist entrepreneurship. Property rights and titles support individual economic development. As one

representative of a European development agency noted, more effort must be made to reduce legal barriers "that are restricting women's rights in the field of property rights thus preventing them from cultivating land on their own and developing their own agricultural business" (Interview 23, 2018).

- *Judicial*. Interviewees noted that the West African states have difficulty applying laws that could support gender equality. They lamented the lax application of clauses that defend women's rights, such as the law related to health and reproduction (2002), the national gender policy (2011) and the law banning underage marriage in Mali (2011) or the Code of People and of Families in Benin (2004) (Interview 35, 2018). Throughout West Africa, the gender equality efforts of countries are challenged by customary and religious norms that define which conjugal union forms the ideal family, the obligations or spouses or how the wealth is redistributed within the household and at the deaths of parents. In the area of trade, regional organisations and governments are also struggling to reduce informal taxes on women entrepreneurs on their regional journeys and exports. In the opinion of this executive director of an organisation based in Ouagadougou, women in the region particularly suffer from "non-compliance with national regulations on the free movement of goods and people in the ECOWAS area" (Interview 12, 2018).

Increase the political representation of women

As to the question of what measures could support an increase of women's representation in public bodies and in decision making in West Africa, more than half of policymakers and specialists interviewed supported some form of affirmative action. Instituting quotas for women is one of the measures thought to accelerate social change in the region and that would guarantee a more equitable representation of the "second half of society", according to the expression of a head of research based in Ghana (Interview 18, 2018). The law adopted in Senegal in May 2010 on the parity of women and men in institutions that are totally or partially elected is an example of considerable progress in the recognition of women's rights (Government of Senegal, 2010).

The respondents note, however, that the introduction of national quotas is not enough to achieve parity. They think that broader measures need to be taken to increase the capacity of women who are already working in politics and to convince politicians to give women in their party more support (Interview 36, 2018). Measures to empower women must also reach out to new generations of women who are expected to play a greater political role.

Beyond the political sphere, respondents agreed on the need to increase women's representation in institutions likely to influence economic activity, whether they be ministries, courts, regional organisations or professional associations. As noted by the head of a European co-operation agency, "greater participation of women in the development of agricultural, trade, and finance sector policies, and stronger participation in designing local economic development policies would help ensure better access for women to production means, markets, finance and political connections that would help develop their businesses" (Interview 3, 2018).

As such, education is seen as "the most relevant and effective measure" to encourage women's participation in decision making (Interview 12, 2018). For the head of an African regional organisation, parity in this area involves "The introduction of modules on leadership in school and university courses and an increase in the awareness of opinion leaders on the political role that women can play and the constraints they face" (Interview 31, 2018). Some interviewees also noted the importance of promoting a different image of women entrepreneurs to the general public than that which prevails in the region. "The promotion of women in decision-making bodies requires a greater awareness of the role of women entrepreneurs in the media and the opportunities offered by private entrepreneurship," observed the head of an African regional organisation specialising in trade (Interview 22, 2018).

Upgrading rice value chains

The improvement of the profile of women entrepreneurs in the region also depends on macroeconomic factors linked to the evolution of urban demand, global market prices and the organising capacity of competing agricultural value chains. The rice network explored in this report clearly illustrates the potential of certain agricultural sectors in the region: demand is growing, women are well-represented and yet their average earnings are five times less than that of men.

In recent years, increased government intervention has prompted the development of private rice mills, whose financial capabilities would allow for the investments necessary to intensify the local value chain. The 2008 rice trade crisis has in fact accelerated pre-existing dynamics, particularly the transition from a smallholder sector to an industrial or semi-industrial sector that is more integrated and capable of competing with imported rice in terms of quality (OECD/SWAC, 2011). The sector should ideally be structured around high capacity rice mills, which have signed contracts with producers, provide seed and inputs to rice farmers, who in turn sell their production to the contracting rice mill. This would ensure a regular supply to the mill of a uniform, high quality raw material. The paddy rice would then be processed into high-quality rice and sold through a network of shops, thereby competing with imported rice. Organising the sector in this way would remove four major constraints in the sector: the mix of varieties, the regular supply to the rice mills, the quality of the local rice sold on the market, and its presentation to consumers.

While the industrial rice mill is an agent of integration for the regional value chain, the current focus on improved production alone is unlikely to have the desired effect in altering consumer preferences for imported rice, particularly in urban markets. The value chain is dominated by smallholder farmers engaged in rice production partially for staple as well as cash crop production. Low usage of enhanced input and mechanised technologies contribute to the rudimentary nature of smallholder rice production. Although new innovative methods are being introduced through technical agencies (such as Africa Rice in Côte d'Ivoire), only a minority of rice farmers operate at a commercial scale supplying wholesalers at scale to international quality standards. As discussed in this report, very few of these wholesalers are women.

In addition, processing standards vary considerably across West Africa. Small-scale processing is dependent on portable basic milling machinery with only a minor proportion of millers operating with modern facilities able to produce quality polished rice. In Nigeria, there are examples of modern sized mills integrated with large-scale paddy production. The lack of co-operation between actors across the rice value chain is a major obstacle to upscaling productivity and delivering the necessary improvements to the quality of local rice production. Vertical integration involving the co-operation of actors across the chain is particularly weak within West Africa's rice sector due to market fragmentation, inadequate market information networks and limited channels of communication, especially in relation to producers and large buyers, which contributes to an absence of incentives for technology adoption. Although horizontal co-ordination amongst producer organisations can be well advanced where high levels of government intervention exist, such as subsidy provision, there is generally a low level of co-operation within groups of value chain actors particularly amongst processors and traders.

Consequently, a coherent development of public policies that respond to the extreme volatility of food prices remains the challenge at hand for West Africa. This became clear after the 2008 crisis when policies provided for trade restrictions and subsidies reached their limits. Since then, the actors involved in the rice sector have been seeking reliable information in what has now become an unpredictable policy environment. The taxation regime for rice imports and production subsidies in particular can suddenly change. Prices can also be regulated through interventions in the physical market by government agencies and companies. The 2008 crisis did in fact prompt governments to boost public stocks of cereals, which

were primarily used to make food available to populations considered to be vulnerable to food crises, and not to regulate prices in the markets.

Price regulation based on predictable institutional purchases would promote market stability. Given the strong level of interdependencies in the regional rice market, the introduction of a regulation policy should be discussed at the inter-regional level aiming at co-ordinating national policies (OECD/SWAC, 2011). Upgrading rice value chains and strengthening the function of key actors including input suppliers, producers, processors, traders, wholesaler and importers, is therefore paramount for building access for poor farmers to profitable urban markets and realising the potential contribution of the rice sector to transformative economic growth.

WOMEN'S NETWORKS AND COMMERCIAL ACTIVITIES: PERSPECTIVES

Women entrepreneurs are constrained by their structural position in their homes, their communities or their commercial networks. The study of the rice network (Chapter 4) shows that women occupy peripheral positions in the value chain, which limit their ability to grow their profits or influence prices. Consequently, they have less social capital than men, who occupy more central and more remunerative positions in the value chain. This marginalisation of women requires public policies that consider not only the attributes of women but their social relations. Structural causes also explain the fragmentation of the governance network involved in the economic activities of women (Chapter 5). The lack of a community of actors that are well-connected to one another makes the co-ordination of public policies in the region difficult.

Women's entrepreneurship in West Africa shows the value of understanding productive and commercial dynamics from the point of view of networks. This approach is a research tool for the social and economic sciences, a lever of empowerment for local communities and non-governmental organisations and a tool to inform public policies.

The analysis of social networks allows for the visualisation of relationships within networks and highlights the structural causes of marginalisation of certain social groups. By mapping kinship, friendship, solidarity or business relationships constraints obscured by the complexity of social relationships are revealed. While each actor in a network can identify who their partners are and can usually assess the relationships between their peers, it is much more difficult to know which relationships are maintained at the next degree of separation. However, these second-order connections are crucial to understanding the autonomy of individuals in the network. In the rice network, the place occupied by women in the sector is dependent, in part, on that occupied by men. Visualising these unequal relationships is an essential first step in the process of facilitating interventions in social networks.

Several strategies can be employed to affect the links that connect individuals or organisations. These strategies are based on the principle that social networks facilitate the dissemination of ideas and practices within each subgroup of actors and between communities (Valente, 2012). They help accelerate social change and increase the effectiveness of organisations, two areas particularly relevant to women's entrepreneurship in West Africa.

- *Identification*. The first strategy is to identify the central actors that can potentially change the behaviour of the entire network. The centrality of individuals or central organisations can be measured by the number of links, the way in which these links join disconnected and/or extraterritorial communities, the degree to which they are connected to other central actors, or their proximity to the centre of the network (Chapter 3). Strategies to change the social behaviour of network actors are more likely to succeed if they rely on individuals or organisations with atypical structural positions, such as intermediaries, or on actors who already have strong social capital.
- *Segmentation*. A second strategy to promote social change is to try to influence an entire group rather than only individuals. Some

networks have a centre-periphery structure in which all actors tend to interact with the core of the network, regardless of their structural position. The architecture of these networks can be used to spread new practices, from the centre to the periphery of the network.

- *Induction*. A third strategy is to stimulate the diffusion of social changes between already connected actors (peers). This strategy, which is like a communication or marketing campaign, uses the properties of the existing network to facilitate the dissemination and adoption of new behaviours. Two methods stand out: that of promoting word-of-mouth, now facilitated using social media, and that of peer-to-peer recommendations. Numerous studies show that the adoption of social, agricultural and technological innovations is facilitated by the proximity between agents involved in promotion and potential users (see Mekonnen et al., 2017).
- *Alteration*. The last strategy is to modify the structure of a social network in order to improve its efficiency by modifying the number of actors, the number of links or by restructuring the existing links. This strategy is explicitly aimed at changing the overall dynamics of the network rather than relying on its existing characteristics. It involves overcoming individual resistance and institutional barriers that limit the exchange of information or resources within and across business or governance communities.

Public policies can use network strategies to encourage the economic activities of women in West Africa and their governance in the following ways.

- Policies seeking to introduce social change in gender equality in the region can focus on identifying the central actors with the greatest interest in change. These actors are often brokers occupying a unique position in the networks rather than actors that already have lots of connections. By connecting fragmented communities, these brokers are exposed to external ideas and resources that are generally inaccessible to highly integrated actors in their communities. Peripheral actors, such as women, may also be considered as useful change agents, as they generally do not have access to the material and symbolic benefits afforded to more central actors, such as a diverse network of suppliers. The analysis of social networks can contribute to the concrete implementation of these policies, by precisely identifying which actors are best able to disseminate new practices within their network.
- In addition to strategies for identifying individuals with atypical profiles, such as brokers, public policies can also develop network approaches that target a particular group. In commerce, women form a group whose social capital must be promoted. The example of the rice sector shows that women's education, work experience and income levels are significantly lower than men. The analysis also shows that the centrality of women within networks is lower than that of men regardless of the measure adopted, which is explained by their relegation to low-paying segments of the value chain. These gender gaps justify public policies specifically targeted at women involved in production and marketing, in order to reduce the barriers that limit their access to markets, transportation, credit and education.

  A segmentation strategy can also be adopted to promote exchanges within the governance network of organisations involved in promoting women's entrepreneurship in West Africa. The structure of the formal partnerships of this network is similar to a centre-periphery model: the core is made up of a limited number of states and organisations that can implement large-scale initiatives, while the periphery is composed of more specialised organisations. In this type of structure, a network strategy would consist of disseminating new standards or new practices from the heart of the network so that they can be transmitted gradually to all the actors.
- When the social network architecture does not allow for the identification of specific individuals or groups, public policies for

women can use existing interpersonal relationships within a community of friends, parents or peers to induce behavioural changes. Social changes such as later marriages, spaced births or contraception are more rapidly adopted if they are disseminated through communication already established by individuals or organisations. Development policies can build on this principle to promote the dissemination of good practices within professional networks of women farmers and traders in the region.

- Public policies to alter the structure of social networks affect both actors and their relationships. By modifying the architecture of social relations, their goal is to increase the social capital of individuals resulting from the combination of internal links to a community and external links with other social groups that are more diverse from a geographic, ethnic, religious or identity point of view (Walther, 2015).

Public policies promoting women could achieve this goal by changing the number of actors in a network. The addition of actors seems particularly suited to the case of agricultural sectors, such as rice, in which women are under-represented. In this less dense network, adding relationships between women would also be effective to the extent that almost 80% of women's business ties are with men and that many steps are required to connect one actor to another. In a sector dominated by male intermediaries, one of the most critical measures for women's economic development seems to be the promotion of women brokers. This structural position requires investment in transport and storage that is currently inaccessible to many women because of their limited access to financial services.

In the area of governance, the addition of new links could improve co-ordination within and between organisations involved in women's entrepreneurship in West Africa. A structure that maximises both the internal and external links to the different communities of specialists involved in the advancement of women seems the most appropriate. This type of small-world network is theoretically more efficient than the random structure currently in place in the region and much more adapted to the field of regional governance than a highly centralised structure in which a single organisation co-ordinates activity throughout the whole network. A small-world network implies that renewed co-ordination efforts are implemented at different geographical scales.

The networking of actors working on gender and the economy should follow the lead of international and regional organisations, which are often the most connected in the governance network, with contacts within the different governments in the region. Exchanges of information and good practices at this level would maximise external relations to communities working on gender and contribute to a certain regionalisation of development policies for women entrepreneurs. At the national level, this approach should lead to the implementation of place-based policies, which integrate the spatial dimension of development and the specificities of women's economic activities in each country or cross-border region. Unlike policies that promote a particular sector or category of people, these policies seek to exploit the untapped potential of local actors and institutions, which ultimately rely on value chains in the region.

Better governance of women's entrepreneurship also requires that organisations engaged in the governance network strengthen the links between their gender and economic experts. This strengthening of internal co-ordination not only encourages the dissemination of gender-related knowledge within institutions but also promotes the emergence of clearly-identified communities, able to forge links with other specialists working on the promotion of women's economic empowerment in the region.

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