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LAND TENURE JOURNAL

REVUE DES QUESTIONS FONCIÈRES

REVISTA SOBRE TENENCIA DE LA TIERRA

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LAND TENURE JOURNAL

The *Land Tenure Journal* is a peer-reviewed, open-access flagship journal of the Partnerships, Advocacy and Capacity Development Division (OPC) of the Food and Agriculture Organization of the United Nations (FAO). The *Land Tenure Journal*, launched in early 2010, is a successor to the *Land Reform*, *Land Settlement and Cooperatives*, which was published between 1964 and 2009. The *Land Tenure Journal* is a medium for the dissemination of quality information and diversified views on land and natural resources tenure. It aims to be a leading publication in the areas of land tenure, land policy and land reform. The prime beneficiaries of the journal are land administrators and professionals although it also allows room for relevant academic contributions and theoretical analyses.

REVUE DES QUESTIONS FONCIÈRES

La *Revue des questions foncières* est une publication phare, accessible à tous et révisée par les pairs de la Division des partenariats, des activités de plaidoyer et du renforcement des capacités (OPC) de l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO). La *Revue des questions foncières*, lancée au début 2010, est le successeur de la revue *Réforme agraire, colonisation et coopératives agricoles*, publiée par la FAO entre 1964 et 2009. La *Revue des questions foncières* est un outil de diffusion d'informations de qualité et d'opinions diversifiées sur le foncier et les ressources naturelles. Elle a pour ambition d'être une publication de pointe sur les questions relatives aux régimes fonciers, aux politiques foncières et à la réforme agraire. Les premiers bénéficiaires de la revue sont les administrateurs des terres et les professionnels du foncier, mais elle est également ouverte à des contributions universitaires et à des analyses théoriques pertinentes.

REVISTA SOBRE TENENCIA DE LA TIERRA

La *Revista sobre tenencia de la tierra* es una revista insignia, de libre acceso, revisada por pares de la División de Asociaciones, Promoción Institucional y Desarrollo de la Capacidad (OPC) de la Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO). Es la sucesora de *Reforma agraria, colonización de la tierra y cooperativas*, que se publicó entre 1964 y 2009. La *Revista sobre tenencia de la tierra*, cuyo primer numero apareció a comienzos de 2010, es un medio de difusión de información de calidad que proporciona opiniones diversas sobre la tenencia de la tierra y los recursos naturales. Aspira a ser una publicación líder en el sector de la tenencia de la tierra, la política agraria y la reforma agraria. Los principales beneficiarios de la revista son los administradores de la tierra y los profesionales del sector aunque también da espacio a contribuciones académicas relevantes y análisis teóricos.

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The *Land Tenure Journal* welcomes articles on land tenure, land policy and land reform that have not been published in or submitted to any other journal. Authors are invited to write articles in English, French or Spanish preferably using Microsoft Word or Open Office. The manuscripts should have a maximum length of 40 000 characters with spaces, excluding endnotes and references. Authors are also requested to write an abstract (maximum 1 200 characters with spaces) and provide the keywords that best define the issue of their article. All references should be cited in brackets in the text by author and year, for example (FAO 2007). An alphabetical bibliography at the end of the article is to be provided, for example (FAO 2007). *Good governance in land tenure and administration*. FAO Land Tenure Studies No.9. Rome. 57p.

Articles should be sent by e-mail to Land-Tenure-Journal@fao.org. Authors are requested to provide their full name, affiliation, organization and electronic mail address.

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La *Revista sobre tenencia de la tierra* publica artículos sobre tenencia de la tierra y reforma agraria que no hayan sido publicados o presentados en ninguna otra revista. Se invita a los autores a que presenten artículos en inglés, francés o español, preferiblemente en formato Microsoft Word u Open Office. Los artículos no deben superar los 40 000 caracteres contando los espacios y excluyendo las notas finales y las referencias. Además, se invita a los autores a que acompañen sus artículos con un sumario (que no supere los 1 200 caracteres, incluyendo espacios) y una lista con las palabras clave que consideren más representativas del texto. Todas las referencias se deben citar en el texto entre paréntesis indicando el autor y el año, por ejemplo (FAO 2007). Al final del artículo, los autores deben incluir una bibliografía en orden alfabético, por ejemplo (FAO 2007). *Buena gobernanza en la tenencia y en la administración de tierras*. FAO Estudios sobre tenencia de la tierra nº. 9. Roma. 57p.

Los artículos se deben enviar por correo electrónico a la dirección Land-Tenure-Journal@fao.org. Es necesario que los autores especifiquen su nombre completo, afiliación, organización y dirección de correo electrónico.

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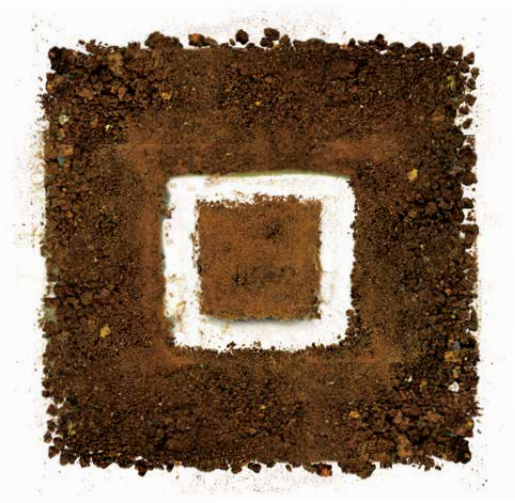

Preface

This issue of the Land Tenure Journal provides a geographically and technically diverse range of papers covering Europe, Africa, and Asia. The articles cover a variety of different situations where land tenure plays a key role in improving food security and reducing poverty: from land consolidation as an alternative to compulsory land acquisition in Germany; to rural land markets and land concentration in Romania; to the impact of secured land rights on crop productivity in Pakistan; to customary land associations and sustainability issues in Papua New Guinea; and to addressing land conflicts in the Democratic Republic of the Congo (DRC) through a Green Negotiated Territorial Development approach.

The first article demonstrates the limitations of the current land acquisition methods in responding to land demands in big infrastructure projects. Compulsory acquisition of land – the power of government to acquire private land for the benefit of society without the willing consent of its owner or occupant – may be disruptive for those who are affected and whose land is taken against their will. The expropriation of land is a

Préface

Ce numéro de la Revue des questions foncières présente une série d'articles sur différents pays et sujets techniques en Europe, Afrique et Asie. Ces articles illustrent des contextes variés où les régimes fonciers jouent un rôle clé dans l'amélioration de la sécurité alimentaire et la réduction de la pauvreté: la consolidation foncière comme alternative à l'acquisition obligatoire de terres en Allemagne; les marchés fonciers ruraux et la concentration des terres en Roumanie; l'impact des droits fonciers sécurisés sur la productivité des cultures au Pakistan; les associations foncières coutumières et les problèmes de durabilité en Papouasie-Nouvelle-Guinée; et enfin la résolution des conflits fonciers en République démocratique du Congo (RDC) dans le cadre d'une approche de développement territorial négocié vert.

Le premier article montre les limites des méthodes actuelles d'acquisition de terres pour répondre aux demandes des grands projets d'infrastructure. L'acquisition obligatoire de terres – le pouvoir du gouvernement d'acquérir des terres privées au bénéfice de la société sans le consentement

Prefacio

En esta edición de la Revista sobre tenencia de la tierra se presenta una serie de documentos variados desde el punto de vista técnico y geográfico que abarcan Europa, África y Asia. Los artículos tratan sobre una gran variedad de situaciones distintas donde la tenencia de la tierra desempeña una función fundamental en la mejora de la seguridad alimentaria y la reducción de la pobreza: desde la concentración parcelaria como alternativa a la adquisición obligatoria de tierras en Alemania, los mercados de tierras rurales y la concentración parcelaria en Rumania, las repercusiones que tiene en la productividad de los cultivos del Pakistán otorgar seguridad a los derechos de tierras, y las asociaciones consuetudinarias de tierras y las cuestiones relativas a la sostenibilidad en Papua Nueva Guinea al tratamiento de conflictos de tierras en la República Democrática del Congo a través de un enfoque de desarrollo territorial negociado verde.

En el primer artículo se ilustran las limitaciones de los métodos actuales de adquisición de tierras para responder a las demandas territoriales de los grandes

sensitive issue that can bring about serious complications. Joachim Thomas calls for a smoother and more sophisticated approach: *Unternehmensflurbereinigung*, a specific German land consolidation instrument which has been practiced in Germany for over 70 years but has been given little attention in international literature.

Shifting eastward to Romania, the second article analyses the impact of the recent 17/2014 law, adopted with the goal of bringing Romanian law in line with European Union (EU) legislation. The new law modifies the current procedure regulating the purchase and sale of agricultural land, enabling all natural or legal persons from the EU to buy land in Romania. Rozenn Trédan and Jean-Philippe Colin provide an overview of the current tenure system in Romania, as well as an in-depth description of the new law. They anticipate that the law may strengthen reverse tenancy configurations.

The third article evaluates the impact of secured land rights on crop productivity and household income in Pakistan. Based on a comprehensive dataset collected

de son propriétaire ni de son occupant – peut être très mal vécu par les personnes affectées par la décision et dont les terres sont confisquées contre leur volonté. L'expropriation des terres est une question délicate qui peut entraîner des complications graves. Joachim Thomas appelle à une approche plus douce et plus sophistiquée: le *Unternehmensflurbereinigung*, un instrument de consolidation du foncier spécifique à l'Allemagne, est utilisé depuis plus de 70 ans mais il a reçu peu d'attention dans les études internationales.

Le deuxième article porte son attention plus à l'est, en Roumanie, avec l'analyse de l'impact de la récente loi 17/2014, adoptée pour que le droit roumain soit conforme à la législation de l'Union européenne (UE). La nouvelle loi modifie la procédure actuelle régissant l'achat et la vente de terres agricoles, permettant à toutes les personnes physiques ou morales de l'UE d'acheter des terres en Roumanie. Rozenn Trédan et Jean-Philippe Colin donnent un aperçu du système foncier actuel en Roumanie, et décrivent en détail la nouvelle loi. Ils pensent que la loi peut inverser les paramètres fonciers.

proyectos de infraestructura. La adquisición obligatoria de tierras —la facultad del gobierno de adquirir terrenos privados en beneficio de la sociedad sin el consentimiento voluntario de su propietario u ocupante— puede ser perjudicial para quienes se vean afectados y cuya tierra se tome en contra de su voluntad. La expropiación de tierras es un tema delicado que puede traer consigo graves complicaciones. Joachim Thomas invita a adoptar un enfoque más sofisticado y armonioso: el *Unternehmensflurbereinigung*, un instrumento alemán específico para la concentración parcelaria que se ha estado aplicando en Alemania por más de 70 años, aunque ha recibido poca atención en las publicaciones internacionales.

Desplazándonos en dirección Este hacia Rumania, veremos que en el segundo artículo se analizan las repercusiones de la ley 17/2014, aprobada recientemente con el objetivo de alinear la legislación rumana con la legislación de la Unión Europea (UE). La nueva ley modifica el procedimiento actual que rige la compra y venta de terrenos agrícolas y permite que todas las personas físicas o jurídicas de la

through a field survey of 950 households from four major provinces across the country, the study by Akhter Ali, Muhammad Imitiaz, Dil Bahadur Eahat and Bhagirath Begera shows that farmers with secure land rights have higher crop yields, higher household income, and lower poverty levels, compared to farmers with insecure land rights. Findings suggest that an effective land reform policy is important for improving food security and livelihoods, and reducing poverty, because secure land rights will help to increase food and cash crop yields. Subsequently, the increase in yield can lead to increased household income.

The fourth article offers a comparative analysis of three types of land associations operating in Papua New Guinea, with a view to identifying their relative strengths, weaknesses and policy implications for the sustainable development and management of customary land. After analysing the perceptions of 129 customary landowner-households and stakeholders concerning the sustainability of customary land associations in Papua New Guinea,

Le troisième article évalue l'impact des droits fonciers sécurisés sur la productivité des cultures et le revenu du ménage au Pakistan. L'étude d'Akhter Ali, Muhammad Imitiaz, Dil Bahadur Eahat et Bhagirath Begera, basée sur une série de données complète recueillie dans le cadre d'une enquête sur le terrain auprès de 950 ménages de quatre grandes provinces du pays, montre que les agriculteurs ayant des droits fonciers sécurisés ont des rendements plus élevés et des niveaux de pauvreté moindres par rapports aux agriculteurs dont les droits fonciers ne sont pas sécurisés. Les données suggèrent qu'une politique de réforme foncière efficace est importante pour améliorer la sécurité alimentaire et les moyens de subsistance et réduire la pauvreté. En effet, les droits fonciers sécurisés contribuent à accroître les rendements des cultures vivrières et de rapport. Par la suite, l'augmentation des rendements peut entraîner une augmentation du revenu des ménages.

Le quatrième article propose une analyse comparative de trois types d'associations foncières en Papouasie-Nouvelle-Guinée, en vue d'identifier leurs points forts, leurs

UE compren tierras en Rumania. Rozenn Trédan y Jean-Philippe Colin proporcionan una visión general del sistema actual de tenencia en Rumania, así como una descripción detallada de la nueva ley. Prevén que la ley podrá fortalecer las configuraciones de tenencia inversa.

En el tercer artículo se evalúan las repercusiones que tiene en la productividad de los cultivos y los ingresos de los hogares otorgar seguridad a los derechos de tierras en el Pakistán. Sobre la base de un amplio conjunto de datos recolectados a través de una encuesta sobre el terreno realizada en 950 hogares de cuatro provincias importantes del país, el estudio de Akhter Ali, Muhammad Imitiaz, Dil Bahadur Eahat y Bhagirath Begera muestra que los agricultores con derechos seguros a la tierra tienen un mayor rendimiento de sus cultivos, mayores ingresos en sus hogares y menores niveles de pobreza respecto de los agricultores con derechos inseguros sobre la tierra. Las conclusiones sugieren que la adopción de una política eficaz de reforma de la tenencia de la tierra es importante para mejorar la seguridad alimentaria y los medios de vida, y reducir así la pobreza, porque la seguridad de

Lepani Karigawa, Jacob Adejare Babarainde and Suma Stevan Holis suggest measures, including adherence to the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (VGGT), by which Papua New Guinea and other countries can improve land tenure governance and achieve sustainable development on customary land.

The issue ends with an article addressing conflicts over land and natural resources in the eastern part of the Democratic Republic of the Congo, and describes the outcome of the implementation of a pilot case. David Tarrasón, Michele di Benedetto and Paolo Groppo present the results of the application of a territorial approach based on dialogue and negotiation, namely the Green Negotiated Territorial Development approach (GreeNTD), as a means of addressing land issues for people affected by unequal access to land specifically and to natural resources more broadly (e.g. forests, water, arable land), in the eastern part of the country.

faiblesses et leurs implications pour le développement durable et la gestion des terres coutumières. Après avoir analysé les perceptions de 129 propriétaires fonciers coutumiers et parties prenantes concernant la durabilité des associations foncières coutumières en Papouasie-Nouvelle-Guinée, Lepani Karigawa, Jacob Adejare Babarainde et Suma Stevan Holis proposent plusieurs types de mesure, y compris l'adhésion aux *Directives volontaires pour une gouvernance responsable des régimes fonciers applicables aux terres, aux pêches et aux forêts dans le contexte de la sécurité alimentaire nationale* (VGGT), à travers lesquelles la Papouasie-Nouvelle-Guinée et d'autres pays peuvent améliorer la gouvernance foncière et mettre en place un développement durable sur les terres coutumières.

Le document se termine par un article sur les conflits relatifs aux terres et aux ressources naturelles dans la partie orientale de la République démocratique du Congo qui décrit les résultats d'un projet pilote. David Tarrasón, Michele di Benedetto et Paolo

los derechos de tierras contribuirá a aumentar los rendimientos de los cultivos alimentarios y comerciales. Posteriormente, el aumento de los rendimientos puede conducir a un incremento de los ingresos en los hogares.

En el cuarto artículo se ofrece un análisis comparativo de los tres tipos de asociaciones de tierras que funcionan en Papua Nueva Guinea, con miras a identificar sus fortalezas, debilidades e implicaciones de políticas en relación con la gestión y el desarrollo sostenibles de las tierras consuetudinarias. Tras analizar las percepciones de 129 familias propietarias de tierras consuetudinarias y partes interesadas respecto de la sostenibilidad de las asociaciones de tierras consuetudinarias en Papua Nueva Guinea, Lepani Karigawa, Jacob Adejare Babarainde y Suma Stevan Holis sugieren adoptar medidas, como la adhesión a las *Directrices voluntarias sobre la gobernanza responsable de la tenencia de la tierra, la pesca y los bosques en el contexto de la seguridad alimentaria nacional* (VGGT), a través de las que Papua Nueva Guinea y otros países pueden mejorar la gobernanza de

Finally, we would like to take this opportunity to express our sincerest gratitude to the authors and the many others who have contributed to this issue of the Land Tenure Journal.

Groppo présentent les résultats de l'application d'une approche territoriale basée sur le dialogue et la négociation, à savoir la GreeNTD ou approche de développement territorial négocié vert (GreeNTD, pour son sigle en anglais), afin de traiter les problèmes fonciers des personnes affectées par l'accès inégal à la terre spécifiquement, et aux ressources naturelles plus largement (par ex. les forêts, l'eau, les terres arables), dans la partie orientale du pays.

Enfin, nous aimerions profiter de cette occasion pour exprimer notre plus sincère gratitude aux auteurs et aux nombreuses autres personnes qui ont contribué à ce numéro de la Revue des questions foncières.

la tenencia de la tierra y lograr un desarrollo sostenible en tierras consuetudinarias.

Esta edición termina con un artículo que trata sobre los conflictos en torno a la tierra y los recursos naturales en la parte oriental de la República Democrática del Congo, en el que se describe el resultado de la aplicación de un caso experimental. David Tarrasón, Michele di Benedetto y Paolo Groppo presentan los resultados de la aplicación de un enfoque territorial basado en el diálogo y la negociación, a saber, el enfoque de desarrollo territorial negociado verde (GreeNTD, por sus siglas en inglés), como medio de hacer frente a los problemas en torno a la tierra que padecen las personas afectadas por la desigualdad de acceso a la tierra en lo específico y a los recursos naturales más en general (como bosques, agua, tierras cultivables) en la parte oriental del país.

Por último, quisiéramos aprovechar esta oportunidad para expresar nuestro más sincero agradecimiento a los autores y a las muchas otras personas que han aportado su contribución a la presente edición de la Revista sobre tenencia de la tierra.

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LAND CONSOLIDATION AS AN ALTERNATIVE TO COMPULSORY LAND ACQUISITION BY BIG PUBLIC INFRASTRUCTURE PROJECTS

CONSOLIDATION DES TERRES COMME ALTERNATIVE À L'ACQUISITION OBLIGATOIRE DE TERRES PAR DE GRANDS PROJETS D'INFRASTRUCTURE PUBLIQUE

CONCENTRACIÓN PARCELARIA COMO ALTERNATIVA A LA ADQUISICIÓN OBLIGATORIA DE TIERRAS PARA GRANDES PROYECTOS DE INFRAESTRUCTURA PÚBLICA

ABSTRACT

COMPULSORY LAND ACQUISITION

LAND CONSOLIDATION

UNTERNEHMENSFLURBEREINIGUNG

The current practice of land acquisition by big public infrastructure projects is described. Some countries apply land consolidation methods, sometimes more and sometimes less successfully, in order to satisfy the demand for land in such public infrastructure projects which require significant amounts of it. The legal limitations of that practice are demonstrated. In land consolidation cases where an agreement with the affected landowner(s) is not achieved, the case needs to undergo a regular expropriation. The German approach known as *Unternehmensflurbereinigung* can provide the land needed in a manner that is seen as acceptable and equitable by the original landowners, without any legal uncertainties of time and of place.

RÉSUMÉ

ACQUISITION OBLIGATOIRE DE TERRES

CONSOLIDATION FONCIÈRE

UNTERNEHMENSFLURBEREINIGUNG

La pratique actuelle d'acquisition de terres par de grands projets d'infrastructure publique est décrite. Certains pays appliquent des méthodes de consolidation foncière, avec plus ou moins de succès, afin de satisfaire la demande de terrains dans de tels projets d'infrastructure publique, qui nécessitent des superficies importantes. Les limites légales de cette pratique sont démontrées. Dans les situations de consolidation foncière où un accord avec le ou les propriétaires terriens touchés ne se fait pas, le cas doit être soumis à une expropriation régulière. L'approche allemande connue sous le nom de *Unternehmensflurbereinigung* peut fournir les terres nécessaires d'une manière jugée acceptable et équitable par les propriétaires fonciers d'origine, sans aucune incertitude juridique de temps et de lieu.

SUMARIO

ADQUISICIÓN OBLIGATORIA DE TIERRAS

CONCENTRACIÓN PARCELARIA

UNTERNEHMENSFLURBEREINIGUNG

En este artículo se describe la práctica actual de adquisición de tierras en el marco de los grandes proyectos de infraestructura pública. Algunos países aplican métodos de concentración parcelaria, a veces con más o con menos éxito, a fin de satisfacer la demanda de tierras en esos proyectos de infraestructura pública que requieren una gran cantidad de ellas. Aquí se demuestran las limitaciones jurídicas de esa práctica. En los casos de concentración parcelaria en que no se llegue a un acuerdo con el/los propietario(s) afectado(s), el caso deberá someterse a una expropiación ordinaria. El enfoque alemán conocido como *Unternehmensflurbereinigung* puede proporcionar los terrenos necesarios de un modo que los propietarios originales consideran aceptable y equitativo, sin ningún tipo de incertidumbre jurídica sobre el tiempo o el lugar.

INTRODUCTION

States retain powers of compulsory land acquisition in order to allow their governments to acquire land for specific purposes. Compulsory acquisition is the power of government to acquire private rights in land without the willing consent of its owner or occupant, in order to benefit society. The nature of these powers and the ways in which they are used are invariably sensitive and have wide complications, including from the perspective of international human rights agreements and their national expressions (Munro-Faure, 2008).

Given its role in good land tenure governance and land administration, particularly concerning fair implementation of expropriation methods where this recourse is unavoidable, the Food and Agriculture Organization of the United Nations (FAO) has been working on this issue. It has collected and analysed data on satisfactory and less satisfactory approaches to compulsory acquisition of land, and has prepared a guide to support land tenure and land administration officials where such acquisitions are being implemented (FAO, 2008). A number of other FAO publications supplement that guide, for instance FAO (2008), Norell (2008), Langford and Halim (2008), Mangioni (2008), Kakalu (2008), Argerich and Herrera (2008), Salauyova (2008), Yomralioglu, Uzun and Nisanci (2008), and Larbi (2009). These demonstrate the continuous global relevance of land acquisition where governments have to provide for the public good.

Even when good practice is applied, in each case compulsory acquisition of land is disruptive for those who are affected and whose land is taken: compulsory land acquisition is always to some degree unsatisfactory for the people involved; unsurprisingly, it can cause emotional reactions. There is therefore an increasing interest in academic, policy-making and administrative circles in alternatives to compulsory land acquisition by public infrastructure projects. As a starting point, there is a broad consensus in international land management circles that more smooth-working and sophisticated instruments are needed for compulsory land acquisition procedures.

Even when good practice is applied, in each case compulsory acquisition of land is disruptive for those who are affected and whose land is taken

The German approach known as *Unternehmensflurbereinigung* is one such sophisticated instrument. Although it has been in use for more than 70 years (Weiss, 2007), to date, publications describing this approach have mostly been addressed to German readers (Weiss, 1991; Thomas, 1992; Weiss, 2000; Thomas, 2010 and 2011a). Only a few sporadic hints at this

methodology have been found in English (van Dijk, 2003; Thomas, 1995 and 2004; FARLAND, 2007). A comprehensive English description of this specifically German land consolidation instrument is therefore missing: this article aims to close that gap. The paper describes the German practice in some detail, but its main aim is to contribute to the international literature on the issue. It will therefore mainly deal with the general methodology and the technical and administrative requirements of the German instrument. At the outset, it is necessary to look at the fundamental legal principles that need to be observed in applying this approach, and a brief consideration of the German Constitution therefore follows. This should be helpful to those who may be considering adapting *Unternehmensflurbereinigung* to the constitutional and legal circumstances of other states.

COMPULSORY LAND ACQUISITIONS ALWAYS CREATE 'LOSERS' AMONG THE AFFECTED LANDOWNERS

The constitutions of European states mostly provide both for the protection of private property rights, and the power of the government to acquire land without the willing consent of the proprietors.

Article 14
[Property – Inheritance – Expropriation]

1. Property and the right of inheritance shall be guaranteed. Their content and limits shall be defined by the laws.
2. Property entails obligations. Its use shall also serve the public good.
3. Expropriation shall only be permissible for the public good. It may only be ordered by or pursuant to a law that determines the nature and extent of compensation. Such compensation shall be determined by establishing an equitable balance between the public interest and the interests of those affected. In case of a dispute concerning the amount of compensation, recourse may lead to the ordinary courts.

Box 1
Extract of the basic law of the Federal Republic of Germany (*source*: Grundgesetz für die Bundesrepublik Deutschland vom 23. Mai 1949 (BGBl. S. 1))

For example, the Basic Law for the Federal Republic of Germany states in Article 14(1) that: 'Property (and the right of inheritance) shall be guaranteed'. Meanwhile in Article 14(3) it states that: 'Expropriation shall only be permissible for the public good. It may only be ordered by or pursuant to a law that determines the nature and extent of compensation' (Box 1). Regarding the 'philosophy' behind such dualism within the German and other European Constitutions see, for example, the work of Thomas (2014).

Such 'public goods' include, for instance, transportation facilities (public roads, canals, highways, railways, airports, harbours), public water utilities (reservoirs, dams, water protection zones, flood prevention measures), and environmental and nature conservation measures. In future, climate protection measures may also be regarded as a 'public good' and therefore an equally legitimate reason for expropriating land. Traditionally, private land was and can be expropriated for military purposes too.

In all of these situations, land on a large scale is needed; however, such large tracts of land are often privately owned, and as such, their free availability and use is constitutionally guaranteed. The extent of loss of land rights may vary considerably, both in terms of the amount of land involved and the types of rights that are affected. The transfer of the land parcels occurs either as a whole or partially, a few parcels at a time. The amount of land acquired depends on the overall project plan, its specific accompanying measures and whether additional land and is needed for such extras as side installations. Land acquisition is also permitted for specific environmental measures that may need to be taken as a result of the environmental impact assessment of the project itself.

During the planning phase, the lands to be acquired are identified in terms of their exact location and size. The impact of the project is considered through participation of the affected persons. This planning phase involves not only the participation of the landowners that may be affected, but also the whole public. Options are analysed and presented to the public for discussion; a better understanding of the public's view is thereby obtained, so that the land acquisition option that presents the fewest obstacles and the best overall outcomes can be chosen (FAO, 2008). The impact on the environment and on private landowners is of particular concern in this regard.

A public hearing describing the plan is then announced so that the general public can learn about the project in detail. They are then able to imagine the project's possible impacts on their livelihoods in general and their property in particular. They may express their opinions and call the developers' attention to issues that they think should be regulated.

At the end of the 'Plan Approval Procedure' there is an official administrative decision, the Official Approval of the Plan, in which permission for the realization of the project is declared. Besides regulations on a number of legal, technical and procedural issues, this permission makes a specific declaration about the extent of compulsory land acquisition *vis-à-vis* the project measures concerned.

Figure 1
Big public infrastructure projects "consume" agricultural land in large scale and affect the landscape in a long run

Source: DB-AG

Landowners affected by a full or partial loss of their land can sue the authorities, but only for a fair monetary compensation. The amount is calculated on the basis of the market value of the land and on any related costs. In practice, the actual financial compensation awarded on this 'equivalence' basis that only takes into account the loss of the land, rarely achieves the aim of returning those affected to the same position as they were in prior to the acquisition (FAO, 2008). The landowners lose their land and their land rights, definitively. Even with generous compensation and fair and efficient procedures, the displacement of people from their established homes, businesses and communities entails significant human costs, not least psychological. This is regarded as unsatisfactory in terms of the fundamental democratic principle of equal treatment of citizens by the state, because of the accidental nature and happenstance that determines which owner and/or land occupant is affected. In Germany, a specific term came into being to describe this situation: the affected owner is deemed to be suffering a 'particular sacrifice', called *Sonderopfer*. It is at this point that the land consolidation methodology comes into play.

LAND CONSOLIDATION AS AN ALTERNATIVE TO COMPULSORY LAND ACQUISITION

Land consolidation as an alternative to compulsory land acquisition has been hinted at in recent studies. For example, the 2008 FAO article on *Compulsory acquisition of land and compensation* notes that, 'in Denmark land consolidation techniques are used to assist farmers affected by projects' such as new highways etc. In this scenario, land consolidation specialists would meet with affected farmers to identify their wishes and suitable land as exchange land; the negotiated agreements of sale and exchange would form the basis of land transactions to be carried out as part of the compulsory acquisition.

In fact, within the wider European land management scene there are a number of examples by which the provision of land can be supported via consolidation activities. For example, the land consolidation authorities in Austria, Belgium, the Czech Republic, Finland, France, Germany, Serbia

and Switzerland all use what might be called 'normal land consolidation procedures' to help provide the land needed for public infrastructure projects on-site, and they attempt to repair encroachments on the rural infrastructure through such projects (Thomas, 2011b). In Austria, there is a specific scenario in which land consolidation legislation comes into play when the developer of a public infrastructure project is unable to freely acquire the land required (TFLG, 1996). Meanwhile in France and Switzerland (Dorèmus, 1992; MGKG, 2008), the land required can be purchased through a percentile contribution of land by the landowners within a land consolidation project.

The above-mentioned approaches can substantially support such public projects, but in order to estimate the effectiveness and success of the different land consolidation instruments applied, the legal requirements have to be taken into account.

Land consolidation in general

Land consolidation is an instrument primarily concerned with parcel reallocation through the exchange of land for specific purposes (Thomas, 2011b). For example, the parcels belonging to a number of farmers can be reorganized into consolidated holdings by changing their number, location, shape and orientation, with the objective of making the cultivation of land more efficient. Land consolidation is typically executed in a project setting according to a procedure that is defined by law (FAO, 2003; FARLAND, 2007: 138), and normally operates on the basis of assessing the quality of the land concerned (the valuation), ensuring that owners are provided with equivalent land in exchange.

Land consolidation is an instrument primarily concerned with parcel reallocation through the exchange of land for specific purposes

Most countries whose systems have been analysed apply a statutory enforced administrative procedure; nevertheless, Europe-wide, enforced land consolidation projects are only begun once the majority of the owners involved appreciate the project and a 'high acceptance level' is achieved. Some European countries have until now only implemented the procedures on a voluntary basis, as is the case in Lithuania (Daugaliene, 2004; Pasakarnis and Maliene, 2011). The specific purposes and objectives to be pursued by the process are determined by law. The traditional concern is improving the efficiency of farming; nevertheless, there are additional objectives of public concern associated with land consolidation. For example, the development initiative

The traditional concern is improving the efficiency of farming; nevertheless, there are additional objectives of public concern associated with land consolidation

of the respective rural area is embedded in the national spatial planning framework and has to be implemented in accordance with it (Thomas, 2011b).

Notwithstanding some of the specific national approaches briefly just described, throughout Europe the different varieties of land consolidation applied in practice can generally be reduced to three different types:

Box 2
Varieties of land consolidation

No.	Type	Purpose	Participation of owners
1	Voluntary Land Exchange (VLE)	Voluntary exchange of single parcels via contracts between single owners	Voluntary
2	Simplified Land Consolidation (SLC)	Exchange and merging of lands: → either on a voluntary basis … → or as a statutory procedure	 Voluntary Obligatory
3	Comprehensive Land Consolidation (CLC)	Comprehensive redesign of fields via the reallotment of lands and the building of new rural infrastructure	Obligatory

A legal analysis of these three traditional land consolidation approaches would state that each of these instruments is principally likely to *support* the construction or alteration of public land-consuming infrastructure projects, and that this process will be *helped* by the provision of the land needed, although none of the instruments can *safeguard* the provision of the land needed at a specific location.

Every land exchange between a developer and a landowner requires a full legal agreement, even in cases where there is a voluntary relinquishing of land ownership. In the case of an obligatory land consolidation with a compulsory dislocation of affected land, the overall requirement is that each landowner has to be compensated in land of equal value. In this situation the private

benefit of the landowners (*Privatnützigkeit*) must have absolute preference over satisfying public concerns. As soon as just one landowner cannot be compensated with equivalent land, the land consolidation procedure cannot be completed successfully. Cases where an agreement with the landowners or equivalent compensation is not achievable have to undergo some kind of compulsory land purchase.

In order to safeguard the rights of the landowner and provide the land needed, a modified legal and procedural approach is therefore necessary, as follows.

Land consolidation in the case of compulsory land acquisition

In Germany, if for some special reason it is permissible to acquire land by compulsory purchase, and if such a measure would affect agricultural land on a large scale, the authority responsible for the compulsory acquisition (in Germany, the so-called 'expropriation authority') may apply for the initiation of a land consolidation procedure: for example, if the loss of land that will be incurred by the parties concerned will be apportioned among a large number of owners, or if the disadvantages that the project may bring about for the general use of land are to be avoided. This is called 'Land Consolidation in the Case of [Permissible] Compulsory Acquisition' (LCCCA), or *Unternehmensflurbereinigung*. LCCCA is exclusively oriented towards the realization of the public project and is therefore seen as being 'for foreign purposes' (*Fremdnützig*) as far as the landowners are concerned.

The methodology

The methodology is quite simple and is based on the exchange of available land at the place of need. The public requirement may be any number of things, for example: a railway line or a highway; the construction or extension of an airport, harbour, dam or reservoir; areas set aside for the environmental compensation caused by the project itself. Principally, the rules concerning the comprehensive land consolidation procedure (CLC) are valid: When the 'Land Consolidation Decision' is made, the 'Body of Participants' comes into being as a body corporate that attends to the common affairs of the participants. The members of the 'Body of Participants' are the landowners. A valuation

The methodology is quite simple and is based on the exchange of available land at the place of need

of the original parcels then takes place. A 'Road and Water Resource Plan' with 'Accompanying Landscape Conservation Plan' is drawn up. These plans cover common and public facilities, especially the removal, alteration and construction of public ways and roads, but also water management facilities ('rural infrastructure'), soil improvement and landscape facilities. Participants are then allowed to voice their desires and concerns regarding the reallocation of the latter. The 'Land Consolidation Plan' is the final compilation of the result of the project. After public notice is given of the decision and any objections and appeals against it are heard, the plan becomes legally binding: it is enforceable and can be implemented. Figure 2 shows a typical land purchase situation that was required for the construction of the Rhine–Main–Danube Canal.

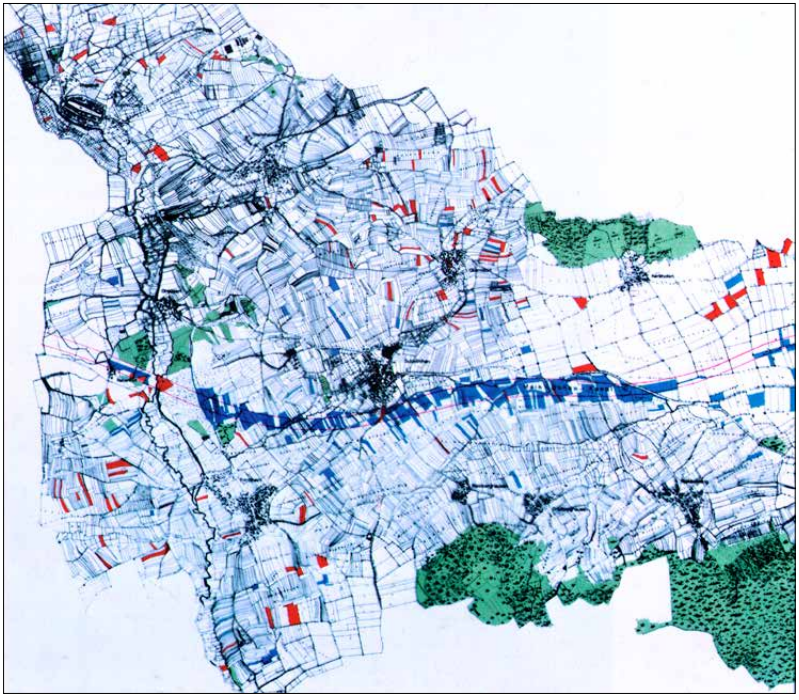


Figure 2
Land purchase situation required for the construction of the Rhine–Main–Danube canal. Blue parcels represent the land purchased by the developer in advance; red parcels were purchased by the land consolidation authority during the land consolidation process

Source: Bavarian State Ministry for Food, Agriculture and Forestry

Where it is not possible to purchase the land required in its entirety, the difference remaining between the available and the required amount is taken from the participants of the land consolidation project. The procedure stipulates that the land will be provided by the participants relative to the value of their original parcels and relative to the aggregate value of all parcels in the land consolidation project. The 'contribution of land' as a percentage of the value of the original parcels is not permitted to be any higher than 5 percent. The land provided for the project is vested in the developer at the planned location by the Land Consolidation Plan. Any party contributing land to the project should be compensated financially for that land by the developer at market value. The example in Box 3 demonstrates how to calculate the 'contribution of land' within the land consolidation project concerned.

Box 3
Calculation of the 'contribution of land'

Land required by the highway project	
→ core land	102 ha
→ extra land for environmental compensation	88 ha
Total	**190 ha**
Available land for the project	
→ already owned by the developer	17 ha
→ purchased by the Land Consolidation Authority	112 ha
Total	**129 ha**
Missing land (difference)	**61 ha**
Size of the land consolidation area	**2345 ha**
Required 'contribution of land': (61 ha / 2345 ha) × 100	**2.6%**
In order not to exceed the limit of 5% (see above), the land consolidation area would have to be a minimum size of: (61ha / 5) × 100	**1222 ha**

Within the current practice of land consolidation in Germany a 'deduction of land' is necessary in at most 10 percent of all cases. By starting the process of land acquisition early, and using a sophisticated determination of the land

area to be consolidated, for most projects the land required can be purchased in its entirety by the land consolidation agency.

However, there is more than just a need for land. Throughout the work of the actual project requiring the land expropriation, a number of practical and negative consequences may occur. For example, existing road and water networks may be interrupted. The lay of the land is highly affected and farms may be cut off from their fields, with uneconomically shaped patches of land remaining, often separated from each other. Some of the remaining land may be large enough for continued agricultural use, but inevitably its fragmentation and separation from other patches of land will reduce net proceeds for the farmer. In the worst cases, the remaining land may be too small for further cultivation of any kind.

All told, what remains is likely to be a highly negative situation as regards the general use and development of the remaining land. To tackle this issue the land consolidation authority draws up – temporarily and in parallel with the main project – a Road and Water Resource Plan and an Accompanying Landscape Conservation Plan. This allows for positive adjustments to be made to the existing landscape and infrastructure as the project develops, and will often result in a fundamentally new orientation and design for the landscape that is more positive overall for society (see Figure 3).

Through a redesign and rearrangement of the landscape that takes into account its rural infrastructure and reallocates the ownership and parcel structure, the disadvantages caused by the project are mitigated. No landowner needs to fear a partial or even a full loss of his or her real estate property; on the contrary, each landowner can expect a fair and equivalent compensation in kind. The 'Particular sacrifices' (*Sonderopfer*) of individuals are excluded, because all landowners are treated equally: every landowner has to contribute the same percentage land to the project, e.g. 2.6 percent of his/her participating land (see Box 3). That achieves an important pacifying effect within the farmers' community.

Through a redesign and rearrangement of the landscape that takes into account its rural infrastructure and reallocates the ownership and parcel structure, the disadvantages caused by the project are mitigated

Where there is early participation of landowners and farmers in a planning process, acceptance of the project by these groups is substantially improved. Segregation of farms from their fields and meadows can be avoided. Through intelligent gathering of the affected parcels, the farm-to-field distance can be

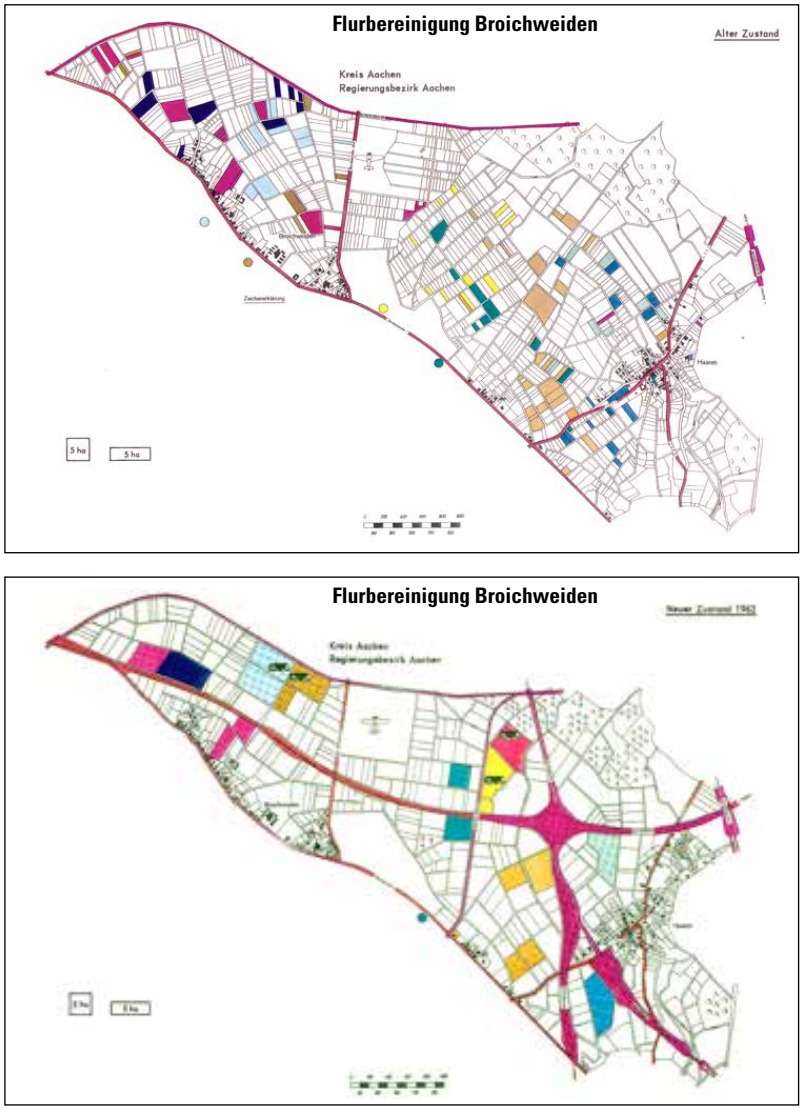


Figure 3
Field structures within the Broichweiden land consolidation project resulting from the construction of the highway near Aachen (before and after). The figure shows that the new road network across fields was adjusted to the main orientation of the highway, allowing a comfortable re-shaping of the fields.

Source: District Government Cologne

minimized and odd remainder parcels caused by the project can be avoided. Similarly, other scattered property belonging to the participants can be merged into this ongoing land consolidation process.

On account of the Road and Water Resource Plan, the area concerned will undergo a significant redesign in accordance with the plans proposed by the project. The length of the rural road network would normally be reduced, as would the number of crossing points with the core project area. This has the positive consequence of a distinct reduction in the construction costs to the developer.

Legal aspects

In establishing and applying this kind of land consolidation exercise to the context of large, land-consuming public infrastructure projects, some legal aspects need to be strictly observed. The LCCCA-type of land consolidation described above means, in essence: 'execution by the state of an administrative decision that leads to compulsory land acquisition'. This is bound to have consequences. For example, a legally-regulated land consolidation project principally needs to be of private benefit (*Privatnützig*). The objectives are normally focused on improving the productivity and working conditions of the agricultural and forestry sectors, as well as promoting the general use and development of the land. The addressees of these goals and measures are the participants of the land consolidation project concerned.

In establishing and applying this kind of land consolidation exercise to the context of large, land-consuming public infrastructure projects, some legal aspects need to be strictly observed

With LCCCA, the first priority is the realization of the public infrastructure project within its permitted limits. It serves 'foreign purposes' (*Fremdnützig*) and isn't exclusively focused on the interests of the landowners, as has already been described above. It is begun on the request of the 'third' party – the developer, the 'expropriation authority' – whose aim is to safeguard the provision of the land required in time for the project to begin. Indeed, that objective pursues public interests and the public good: for example, better transportation, a safe supply of drinking water, or flood prevention. The general public are the first priority here, not the participants of the land consolidation area. Although it is true that the participants in land consolidation also benefit from the improvements in public infrastructure, this LCCCA-type of land consolidation does legally represent the 'execution

of expropriation', a measure which, of course, predominantly serves 'foreign purposes'. The public project therefore has to be legitimized by a formal Official Approval of the Plan (*Planfeststellungsbeschluss*), and the decision must include the permission of compulsory land acquisition.

The procedural process of the LCCCA has to be legally regulated; voluntary approaches are therefore usually excluded. The developer, as the requester and the causer, is obliged to carry the implementation costs of the land consolidation project. The developer pays for the land, the construction costs of rural roads and water bodies, the monetary compensation for the long terms losses incurred by the landowners, environmental compensation measures, and the survey expenditure of the land consolidation agency. (In this case in Germany, a developer will pay that share of the administrative costs of the land consolidation procedure occasioned by him: that is, any costs incurred by the public authorities concerned, such as personnel and materials.)

In the case of land acquisition by a percentage 'contribution of land', the monetary compensation for each owner must occur on the basis of market values and not as agricultural exchange values; this is shown in Box 4. Appeals against the monetary compensation are submitted to and negotiated via an ordinary court.

Box 4
Calculation of the monetary compensation for the 'contribution of land'

Land belonging to owner A involved in the land consolidation project:
→ 12.3456 ha with 23.457 VU

General 'contribution of land':
→ 2.6%

Contribution of landowner A:
→ (0.3210 ha) 610 VU

Monetary market value of 1 VU: (VU = valuation unit)
→ € 23 / VU

Monetary compensation of landowner A:
→ **€ 14 030**

Although LCCCA is legally in effect an 'expropriation', it is not perceived as such by the landowners. Due to the reorganization of the land in the field, it is less difficult than an individual appropriation of the landowner's private property. It fits with the principle that an expropriation for public purposes involving the 'particular sacrifices' of some individuals is only permitted as a last resort.

Practical aspects

Besides the necessary considerations above, some practical aspects are useful in promoting efficient implementation of such projects. The land consolidation procedure should be ordered and started as soon as possible, once the Plan Approval Procedure (or a comparable administrative procedure) has been initiated with regard to the project for which the compulsory acquisition is to be carried out. In each case, the authority responsible for the compulsory acquisition needs to apply formally for the initiation of the land consolidation procedure. The probable circle of participants needs to be informed about the special purposes of the procedure, and about the procedural steps and the costs. A public presentation that shows how already-completed projects have been successful is very useful at this stage: a positive means of beginning to foment the constructive cooperation of landowners and farmers.

The probable circle of participants needs to be informed about the special purposes of the procedure, and about the procedural steps and the costs

During public hearings in the context of the Plan Approval Procedure, the threat of expropriation is often a big obstacle and initiates resistance against the project. Practical administrative experience shows that when a land consolidation agency promises to start an accompanying land consolidation project, resistance to the project is reduced from the very beginning, and overall acceptance of the project itself is improved. Early coordination between the developer and the land consolidation agency concerning the fundamental principles of the proposed land acquisition process is therefore of high importance.

The land consolidation area needs to be defined in such a way as will best serve the purposes of the project overall. It is oriented towards the extension of the public project and focused on successful land purchase for the project. In case of a 'contribution of land', the instruments shown in

Box 2 are set to work. Nevertheless, the extension of the land consolidation area cannot be unlimitedly enlarged, with the idea, for instance, of reducing the amount of 'contribution of land': interdependency with the public project needs to remain visible. The decision on a necessary 'contribution of land' should also be made in consultation with local landowner groups, such as the Farmers' Association.

Occasionally, for linear public projects of a significant length such as highways or railways, a chain of land consolidation projects (*Gruppenflurbereinigung*) becomes useful and necessary (see Figure 4). The projects are elaborated in accordance with the planning and construction progress of the public project. Close cooperation and coordination between the land consolidation authority and the developer is also indispensible here.

The Road and Water Resource Plan, along with the Accompanying Landscape Conservation Plan, sets the framework for a fundamental

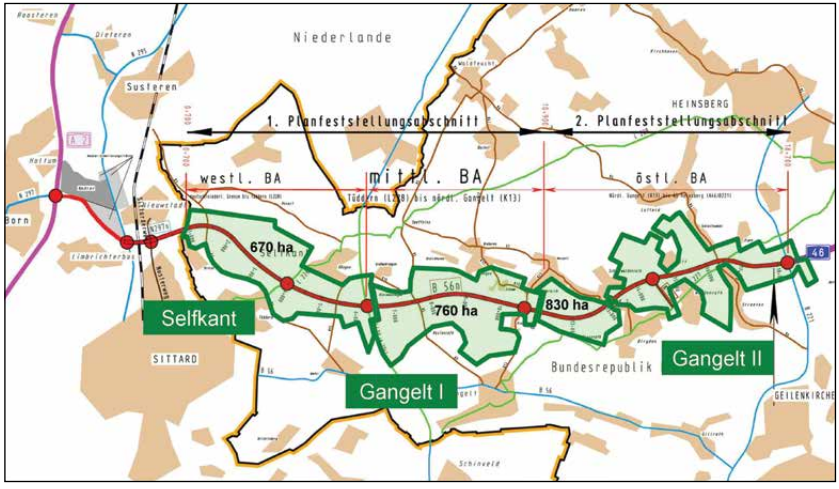


Figure 4
A chain of land consolidation projects occasionally the construction of State Road B 56n in Selfkant region/ North Rhine-Westphalia

Source: District Government Cologne

rearrangement of the area concerned, and regularly results in the renewal of the rural road network. Based on the plan, the land consolidation authority is able to and should actively influence the environmental compensation measures offered by the developer, to the advantage of the established agricultural concerns in the area. These public works projects often result in huge demand for such measures given the land consumption involved – e.g. rededication of agricultural lands and reduction of cultivatable fields – and sometimes in multiple areas (Thomas, 2011a). In planning these environmental compensation measures, the developers are only able to allocate them to parcels the developers themselves already own, and these may not necessarily be environmentally adequate. Nevertheless, where future landscape structures are concerned, sophisticated planning by means of the Road and Water Resource Plan, that takes into account the specific preferences of agricultural interests and uses integrated farming measures, can result in the area requiring environmental compensation being reduced rapidly without diminishing ecological standards (Thomas, 2011a). Box 5 shows specific data *vis-à-vis* the Cologne–Frankfurt high-speed railway.

Box 5
Realization of environmental compensation necessities for the construction the Cologne–Frankfurt high-speed railway (*source*: Kasimir 2001)

Land required during the planning phase	**Essential land**
→ Technical line 72 ha	→ Technical line 71 ha
→ Side installations 21 ha	→ Side installations 14 ha
Sum: 93 ha	*Sum: 85 ha*
Environmental compensation:	Environmental compensation:
→ close to the line 82 ha	
→ far from the line 384 ha	
Sum: 466 ha	*Sum: 341 ha*
Total 559 ha	**Total 426 ha**
'Compensation quote' 1:5	**'Compensation quote' 1:4**

On the basis of the Land Consolidation Plan the land provided for the project is vested in the developer; any party contributing land to the project is financially compensated for that land by the developer. Additionally, the Land Consolidation Plan is regulated such that the developer must redress the disadvantages incurred by the parties concerned in consequence of the project and, where that is not possible or does not seem expedient to the land consolidation authority, pay an indemnity for such disadvantages. The land consolidation authority calculates the value of the monetary compensation and formalizes it within the legally binding Land Consolidation Plan.

The statements above clearly point to the necessity of close cooperation and coordination between developer and land consolidation authority. There are a couple of areas that need to be considered and coordinated in detail, particularly during the construction phase of the project. Equal administrative standards and efficient implementation by all ongoing projects within the overall Federation are indispensable. For that purpose, *References to cooperative road construction and land consolidation* (FGSV, 2008) are available at federal level; at state level there are amending papers that are adjusted to the local situation and administration structure. These references are then applied, for instance, to cooperation in areas such as flood prevention and nature conservation projects too.

THE PRESENT-DAY RELEVANCE OF LAND CONSOLIDATION IN GERMANY, IN CASES OF PERMISSIBLE COMPULSORY LAND ACQUISITION

The LCCCA procedure described above has been in development since the 1930s, when the planning and realization of important public investments, such as the new highway network of the then Third Reich, occasionally involved techniques that were an early example of LCCCA (Weiss, 2007). At that time there was huge political pressure for the successful realization of such investments. The public expectation and demand was that such projects would not have any negative side effects, such as disadvantages for farming, impediment of agricultural production, and resistance from

landowners. In this nascent phase of accompanying public works projects with land consolidation procedures, the order of the day was very much 'learning by doing'. Once projects were successfully implemented and completed, various techniques and experiences were introduced into the land consolidation legislation concerned (*Reichsumlegungsordnung*, adopted 16.06.1937 (Reichsgesetzblatt I, S. 629)).

In present day Germany, LCCCA is regularly used in large public infrastructure projects. For example, in 2009 there were 605 land consolidation projects in train, covering a geographical area of 506 175 hectares (BMELV, 2010). These amounted to 16.5 percent of all land consolidation projects within the German Federation. In North Rhine–Westphalia, the German state with the highest population density, more than 25 percent of recent projects have involved land provision for big infrastructure investments (Thomas, 2010). Once a new public works project is identified – e.g. a bypass, a high-speed railway, some nature conservation measures – different interest groups such as Farmers' Association, nature protection groups, owners' unions apply for an accompanying land consolidation procedure. The municipalities affected then take the opportunity of such investments to initiate a land consolidation project, because it mediates the different and partly contradictory interests of the parties. In this way the communal structural problems present and existing local land use conflicts can begin to be resolved.

The municipalities affected take the opportunity of such investments to initiate a land consolidation project, because it mediates the different and partly contradictory interests of the parties

The mediating impact of land consolidation becomes obvious in comparison with the alternative approach of implementing the infrastructure project by 'compulsory land acquisition'. When planning the construction of the 150-kilometre Cologne–Frankfurt high-speed railway, passing through the regions of North Rhine–Westphalia, Rhineland–Palatinate and Hessen, the government of North Rhine–Westphalia decided at the beginning of the planning phase to accompany this challenging project with land consolidation. However, the governments of Rhineland–Palatinate and Hessen did not make available that instrument for the implementation of the railway's construction. This line has now been in operation for more than a decade and a half. In North Rhine–Westphalia, after notice had been served of the Land Consolidation Plans, and negotiations were successful and objections had been dealt with,

there were no legal disputes that would require the decision of a court. Yet in Rhineland–Palatinate and Hessen, in 2012 there were still more than 300 appeals pending against the compulsory land acquisition, each of these being a single expropriation decision.

THE ADDED VALUE OF LCCCA

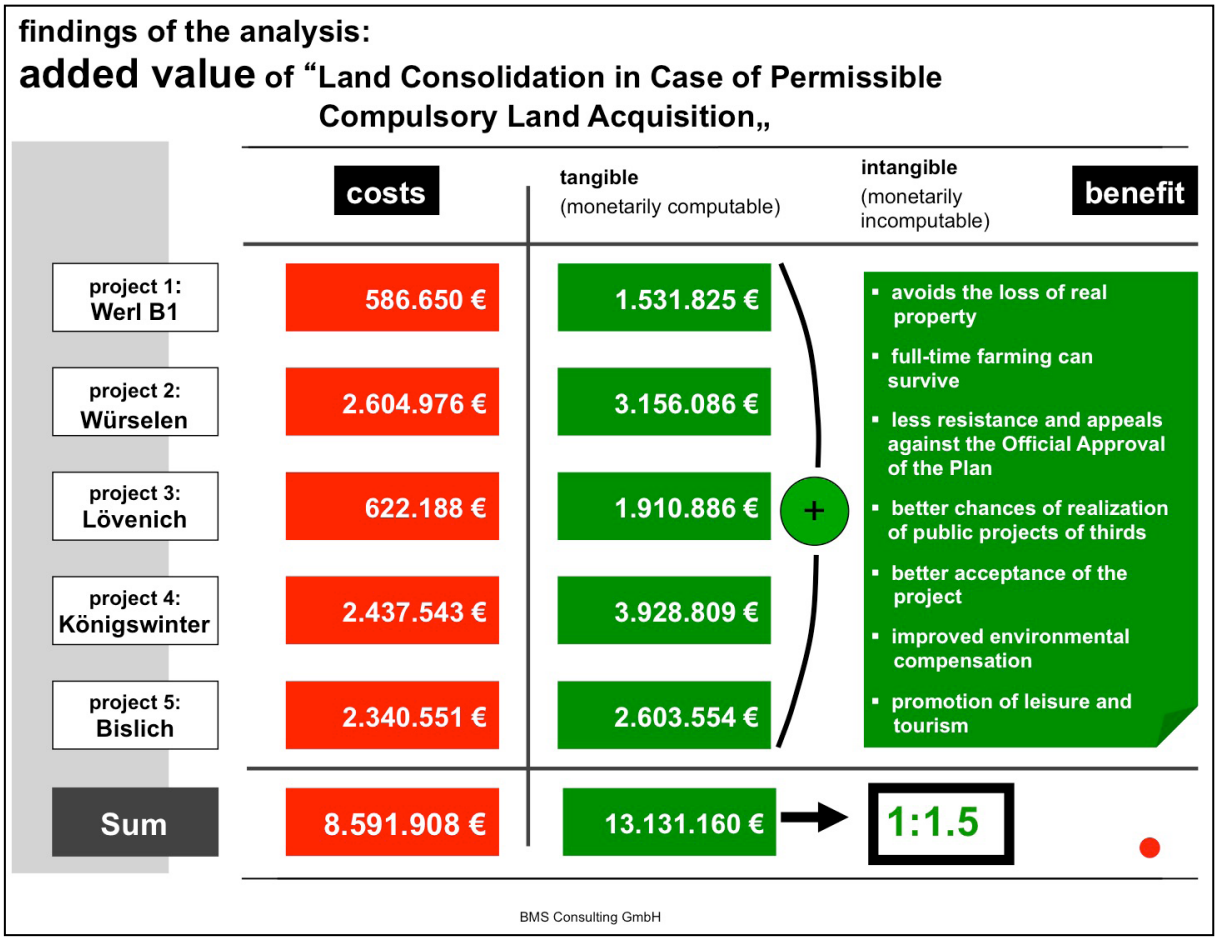
Once public institutions provide for public services, the question of the intervention costs involved becomes even more acute: what do these services really cost, and can they be achieved without an authority needing to make a unilateral decision? To answer this question, in 2003 a research project was begun at the University of Münster, Germany: the 'added value' of LCCCA would be investigated, with an 'impact oriented' focus. A range of different and already-completed land consolidation projects, that occurred in connection with public infrastructure projects, were analysed by economists and financial experts, who undertook a 'full cost survey'. They aimed to find out which kinds of project realization would create higher added value – realization with or without land consolidation? The financial aspects assessed included the personnel costs of all the actors involved – e.g. the land consolidation authority, the developer, the property cadastre, the land registry, the Farmers' Association, the Body of Participants, the supervision agencies. The 'full cost survey' also included proportional pension provisions, material costs, information technology costs, bureau leasing costs, surveying costs, and monetary compensation payments. Similarly, the advantages and cost savings of a land consolidation approach were calculated.

The conclusions reached by this research study were that the realization of public infrastructure projects involving LCCCA create added value that is 1.5 times higher than without LCCCA (BMS consulting, 2005; Seyer and Pieper, 2006). The authors of the study therefore recommended that large land-consuming infrastructure projects should in principle also be accompanied by LCCCA projects.

The realization of public infrastructure projects involving LCCCA create added value that is 1.5 times higher than without LCCCA

Figure 5

Where an LCCCA is involved in the realization of public infrastructure projects, added value is created that is approximately 1.5 times higher than without



Source: BMS Consulting GmbH

CONCLUSIONS

Every type of land consolidation is fundamentally designed to support the realization of public infrastructure projects, and help with the provision of the land needed for these. However applied, their methodology fulfils the requirements of the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (FAO, 2012). But most land consolidation instruments cannot guarantee in advance a full land acquisition at a specific place and at the specific time required in advance: their efficiency depends on the given circumstances. Land Consolidation in the Case of Compulsory Land Acquisition (LCCCA) is a realistic alternative to project realization via 'compulsory land acquisition'. It is useful in terms of equitable treatment of the parties involved, as well as pacifying and mediating the impacts of land use conflicts, project acceptance and economic impacts. It avoids requiring 'particular sacrifices' from landowners, and guarantees the provision of the land needed for the developer, fully and in time. It is based on the general land consolidation methodology, and is completed and adjusted by elements that are taken from expropriation principles. It provides for an active participation of the parties concerned, and bridges the gap between 'constitutionally-guaranteed real private property rights' and 'government provision for land to public purposes' using a sophisticated approach. LCCCA is the contemporary tool for solving land use conflicts in pluralistic democratic societies and is, in every respect, a social benefit.

Land Consolidation in the Case of Compulsory Land Acquisition (LCCCA) is a realistic alternative to project realization via 'compulsory land acquisition'

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REGULATION OF RURAL LAND MARKETS AND LAND CONCENTRATION IN ROMANIA: Prospects opened up by the Law 17/2014

RÉGULATION DES MARCHÉS FONCIERS ET CONCENTRATION FONCIÈRE EN ROUMANIE: perspectives ouvertes par la loi 17/2014

REGULACIÓN DE LOS MERCADOS DE TIERRAS RURALES Y LA CONCENTRACIÓN DE LA TIERRA EN RUMANIA: las perspectivas que ofrece la nueva Ley 17/2014

ABSTRACT

LAND MARKETS
LAND SALES
TENANCY
LAND CONCENTRATION
LAND LAW
LAND POLICY
LAND PRACTICES
LAND PROPERTY
ROMANIA

The Law 17/2014 that came into force on 1 January 2014 modifies the procedure for the purchase and sale of agricultural land in Romania, with the aim of bringing Romanian law in line with EU legislation. It now authorizes all natural and legal persons from the European Union to buy land in Romania. The other objectives of the Law 17/2014 – land

RÉSUMÉ

MARCHÉ FONCIER
ACHAT-VENTE
FAIRE-VALOIR INDIRECT
CONCENTRATION FONCIÈRE
LOI FONCIÈRE
POLITIQUE FONCIÈRE
PRATIQUES FONCIÈRES
PROPRIÉTÉ FONCIÈRE
ROUMANIE

La loi 17/2014 publiée le 1er janvier 2014 modifie la procédure d'achat-vente de terres agricoles en Roumanie, et, dans le but d'harmoniser le droit roumain avec la législation européenne, autorise désormais toutes personnes physiques et morales de l'Union européenne à acheter des terres en Roumanie. Les autres objectifs de

SUMARIO

MERCADOS DE TIERRAS
VENTAS DE TIERRAS
ARRENDAMIENTO
CONCENTRACIÓN PARCELARIA
LEY DE TIERRAS
POLÍTICA AGRARIA
PRÁCTICAS DE TENENCIA DE LA TIERRA
PROPIEDAD DE LA TIERRA
RUMANIA

La Ley 17/2014, que entró en vigor el 1 de enero de 2014, modifica el procedimiento para la compra y venta de terrenos agrícolas en Rumania, con el objetivo de alinear la legislación rumana a la legislación de la Unión Europea (UE). Ahora se autoriza a todas las personas físicas y jurídicas de la UE a comprar tierras en Rumania. Los otros objetivos de la Ley

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consolidation and an increase in the size of family farms – risk not being achieved: (i) the purchase-sale market is relatively inactive due to limited availability of land, and the application of the new legislation may further restrict it; (ii) the law promotes the purchase of land by foreign and Romanian commercial companies who are competing with family farms. The major risk of implementing this law is not so much the massive influx of foreign buyers but the reinforcement of reverse tenure configurations that are part of large-scale land concentration dynamics, across the rental market.

la loi 17/2014 – le remembrement des parcelles et l'augmentation de la taille des exploitations familiales – risquent de ne pas être atteints: (i) le marché de l'achat-vente est relativement inactif du fait de la faiblesse de l'offre, et les conditions d'application de la nouvelle législation pourraient le restreindre davantage; (ii) les exploitations familiales sont concurrencées pour l'achat de terre par les sociétés commerciales – à capitaux étrangers comme roumains – que la loi favorise. Le risque majeur de la mise en œuvre de cette loi est moins l'arrivée massive d'acheteurs étrangers, que le renforcement de configurations de tenure inversée qui s'inscrivent dans des dynamiques de concentration foncière à grande échelle à travers le marché locatif.

17/2014 —concentración parcelaria y aumento del tamaño de las explotaciones agrícolas familiares— corren el riesgo de no alcanzarse: i) el mercado de compraventa es relativamente inactivo, debido a la escasa disponibilidad de tierras, que la aplicación de la nueva normativa puede limitar aún más; ii) la ley promueve la compra de tierras por parte de empresas comerciales rumanas y extranjeras que compiten con las explotaciones agrícolas familiares. El principal riesgo de aplicar esta ley no es tanto la afluencia masiva de compradores extranjeros, sino el refuerzo de las configuraciones de tenencia inversa que forman parte de la dinámica de concentración parcelaria a gran escala en el mercado de alquiler.

INTRODUCTION

Le développement du marché à l'achat-vente de terres rurales est susceptible d'assurer le transfert de la ressource foncière vers des producteurs plus efficients, de constituer une incitation aux investissements (incorporation de leur valeur dans le prix de vente) et de faciliter l'accès au crédit formel (si les garanties foncières peuvent être cédées par les institutions financières en cas de défaut de remboursement). De surcroît, si la relation inverse taille-productivité joue (avantage comparatif des petits exploitants mobilisant essentiellement du travail familial, et donc évitant les coûts de recherche et de contrôle de manœuvres rémunérés), la dynamisation de ce marché concilie efficience et équité. Cette dynamique vertueuse est toutefois questionnée si les acquisitions ont une nature spéculative, dans des contextes de défaillance des marchés du crédit et de l'assurance (Deininger et Feder, 2001) – offre alors alimentée par des ventes de détresse, grands propriétaires favorisés dans l'accès au crédit – ou encore si des économies d'échelle «inversent la relation taille-productivité» et favorisent les grandes exploitations et donc une forte concentration foncière (Requier Desjardins *et al.,* 2014; Muyanga et Jayne, 2016). Cette concentration peut intervenir à travers le marché de l'achat-vente, mais aussi à travers le marché locatif, dans des configurations de «tenure inversée»[1].

La question des marchés fonciers se pose avec une intensité accrue dans le contexte récent des grandes acquisitions (de «l'accaparement foncier»). La littérature dans ce champ est abondante, et des rapports récents montrent qu'au-delà de certains essoufflements relatifs à des situations diagnostiquées à la fin des années 2000, le phénomène demeure (Grain, 2016). Toutes ces «grandes acquisitions» ne relèvent pas du jeu du marché foncier (Cotula, 2012), mais ce dernier joue un rôle majeur dans certains contextes comme

1 Par tenure inversée (*reverse tenancy*), on désigne des situations dans lesquelles des petits propriétaires cèdent en faire-valoir indirect (FVI) une partie ou la totalité de leurs disponibilités foncières à de (plus) grands propriétaires fonciers ou à des entrepreneurs agricoles qui, sans toujours posséder de terre, disposent du capital d'exploitation, d'un accès au capital financier et de compétences techno-économiques et de capacités organisationnelles (Colin, 2013).

le cône sud-américain (Requier Desjardins *et al.,* 2014; Borras *et al.,* 2012), la Russie (Visser *et al.,* 2012), et l'Europe de l'Est: Bulgarie, Hongrie, Pologne et Roumanie, s'agissant de pays membres de l'Union européenne (UE) (Transnational Institute, 2015). Dans le cas des pays nouvellement adhérents à l'UE, les moratoires restreignant les acquisitions foncières par des étrangers, négociés pour des phases transitoires, ont pris fin en 2011, 2014 ou prennent fin en 2016, selon les pays (de façon plus générale sur la régulation des achats-ventes de terre dans l'Union européenne, voir Ciaiain *et al.,* 2012).

Ainsi, le 1er janvier 2014 a été promulguée en Roumanie une nouvelle loi foncière réglementant le marché de l'achat-vente (loi 17/2014). Un élément majeur de cette loi est qu'elle autorise désormais l'achat de terres par des citoyens et personnes morales de l'Union européenne – la location de terres par des personnes physiques et morales étrangères étant quant à elle autorisée depuis 2005. Cette disposition est liée à l'obligation pour chaque État membre de l'UE de permettre à tout citoyen et personne morale membre l'achat de terres agricoles, sans discrimination de nationalité. Lors de son adhésion à l'UE, la Roumanie a négocié un moratoire d'une durée de 7 ans, dans le but de protéger ses exploitations agricoles. La loi 17/2014 a donc vu le jour prioritairement pour harmoniser la législation roumaine avec le droit européen, compte tenu de la fin du moratoire, mais elle va plus loin en modifiant également la procédure d'achat-vente de terres agricoles.

La présente étude a pour objectif d'analyser cette loi 17/2014 et d'évaluer l'incidence qu'elle pourrait avoir sur les pratiques et dynamiques foncières des exploitations agricoles, au regard de l'analyse que l'on peut faire du fonctionnement actuel des marchés fonciers ruraux[2]. De façon plus large, notre analyse propose une contribution à la réflexion sur la régulation des marchés fonciers ruraux, que ce soit à travers des mesures directes (définition

2 Ce texte s'appuie sur les résultats d'un stage de fin d'études réalisé par le premier auteur en Roumanie, du 10 mars au 7 septembre 2014, au sein de l'Ambassade de France. Il ne reflète en aucun cas la position de l'Ambassade de France en Roumanie ou du Gouvernement français. Nous remercions Sévrine Jacobs et Marie-Luce Ghib pour leur appui tout au long de l'étude, Oana Calen, interprète, ainsi que Valérie Villemin-Ciolos, Laurence Amblard et deux lecteurs anonymes pour leurs commentaires sur des versions antérieures de ce texte.

de procédures, restrictions quant aux acteurs du marché, imposition de seuils minimums ou de limites de superficies, fiscalisation des transactions, régulation des prix du foncier, aide à l'acquisition foncière, etc.) ou à travers des mesures indirectes (fiscalité de la propriété ou de l'exploitation foncière, réglementation de l'héritage ou des donations entre vifs, interventions sur les autres marchés: du crédit, des intrants, du travail, etc.) (Lavigne Delville *et al.,* 2017).

Outre un travail de recension bibliographique et la collecte de documents fonciers administratifs, notre analyse – qui relève d'une investigation qualitative – repose sur les enseignements tirés de la production d'un corpus de données au moyen d'entretiens conduits auprès de 22 acteurs institutionnels et professionnels «support», et 35 exploitants et/ou propriétaires fonciers. Nous avons ainsi intégré dans notre échantillon des représentants du Ministère de l'agriculture et du développement rural (MADR, à l'origine de la loi 17/2014), de la Banque mondiale et des scientifiques de l'Institut d'économie agraire, ainsi que des acteurs directement concernés par la loi: agents de mairies et de directions agricoles du *judeţ* (département), professionnels du secteur (avocats, notaires, géomètres, banques et sociétés de leasing, entreprises aidant à l'installation d'étrangers), et d'institutions ayant un lien plus ou moins proche avec la question foncière[3]. Les propriétaires fonciers et exploitants agricoles ont été sélectionnés sur la base d'une stratification visant à couvrir un gradient allant de cédants/vendeurs potentiels à des preneurs/acheteurs potentiels (sur la méthode, voir Trédan et Colin, 2016). Les enquêtes de terrain ont été menées dans le *judeţ* (département) Mures, en Transylvanie, vu comme illustratif de la diversité des situations foncières et agricoles roumaines, avec des investigations réalisées principalement dans trois communes (Găneşti, Băgaciu et Bogata) au cours d'une immersion du premier auteur de ce texte dans la zone d'étude pendant trois mois.

3 Agentia Nationala de Cadastru si Publicitate Imobiliara (ANCPI, Agence nationale du cadastre et de la publicité immobilière), Agentia Domeniilor Statului (ADS, Agence des domaines de l'État), Agentia de Plata si de Interventie in Agricultura (APIA, Agence de paiement et d'intervention en agriculture), Fondul de Garantare a Creditului Rural (FGCR, Fonds de garantie de crédit rural), Agentia de Plata pentru Dezvoltare Rural si Pescuit (APDRP, Agence de paiement pour le développement rural et la pêche).

LE CONTEXTE FONCIER EN ROUMANIE[4]

À partir de 1945, 90 pour cent des terres labourables de la Roumanie ont été collectivisées. Les coopératives agricoles de production (CAP) et les fermes d'État (IAS) étaient entièrement subordonnées aux directives étatiques au travers des plans de production annuels et quinquennaux. Toutes les transactions foncières étaient alors interdites. Même si légalement, les terres exploitées par les CAP restaient la propriété de leurs membres, de fait, ces derniers n'en contrôlaient pas l'usage (Amblard, 2006).

Après la chute du régime Ceausescu, la loi n° 18/1991 rétablit les droits de propriété privée sur la terre. Les coopératives ont été dissoutes et les terres collectivisées en partie restituées aux anciens propriétaires ou à leurs héritiers, et en partie redistribuées aux anciens membres de coopératives qui ne possédaient pas de terre. Ces terres ont ensuite souvent été réintégrées dans de grandes structures pseudo-coopératives, les «sociétés agricoles», créées par d'anciens responsables des collectifs de l'époque Ceausescu (Amblard et Colin, 2006). Les anciens propriétaires de terre des IAS se sont quant à eux vus proposer de devenir actionnaires des nouvelles sociétés commerciales issues des fermes d'État. À la suite de la loi 18/1991, 9 millions d'hectares ont été redistribués à 5,6 millions de propriétaires, qui ont reçu en propriété 2,2 ha en moyenne (Hirchhausen, 1997). Ces superficies réduites sont de plus fractionnées en quatre ou cinq parcelles par propriétaire (Amblard, 2006).

Les chiffres les plus récents montrent une polarisation de l'agriculture roumaine, avec plus de la moitié du nombre total d'exploitations qui exploite moins d'1 ha et occupe 5 pour cent de la SAU, tandis que les exploitations supérieures à 100 ha représentent 0,35 pour cent du nombre total d'exploitations et occupent 48,8 pour cent de la SAU (INS, 2011).

Les réformes de la transition post-communiste ont amené à une déconnexion entre la propriété de la terre et la capacité à l'exploiter, une grande partie des bénéficiaires des réformes foncières, relativement âgée

4 Voir Von Hirschhausen (1997), Amblard (2006), Ghib (2011), Bățăgoiu (2013), Ghib et Boinon (2013).

et/ou résidant en milieu urbain, cédant la terre en FVI dans le cadre de configurations de tenure inversée.

Il n'existe aucune donnée officielle sur la dynamique du marché de l'achat-vente, mais on estime que la surface agricole vendue entre 1999 et 2004 représentait seulement 3 pour cent de la surface agricole (Dumitru *et al.,* 2004). Le nombre de transactions et les superficies concernées auraient triplé entre 2005 et 2009 du fait d'une amélioration de l'environnement institutionnel et de l'instauration des aides directes de l'UE (Swinnen et Vranken, 2010, cités par Ciaiain *et al.,* 2012).

Le marché de l'achat-vente apparaît ainsi comme relativement peu actif. La lourdeur et la durée des démarches, les coûts de transactions, les contraintes d'accès au crédit, la fragmentation du parcellaire, la détention de terres en indivision par un grand nombre d'héritiers, contribuent à expliquer ce faible dynamisme. A l'inverse, le marché du faire-valoir indirect (FVI) serait en forte progression. Le dernier recensement agricole (INS, 2011) révèle qu'en 2010, 28 pour cent de la surface totale agricole était exploitée en FVI, essentiellement par des exploitations avec personnalité juridique (70 pour cent des superficies en FVI). Ces chiffres témoignent d'une activation croissante du marché du FVI, d'autant qu'ils sont loin de capturer le niveau réel de l'activité du marché, puisque de nombreuses transactions sont réalisées hors du système formel.

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Nos observations de terrain en Transylvanie (Trédan et Colin, 2016) vont dans le sens du constat qui se dégage de la littérature et des statistiques. L'analyse des pratiques foncières met en lumière un faible dynamisme de l'achat-vente, dû principalement à l'étroitesse de l'offre. Les propriétaires a priori les plus concernés par la vente – ceux ne disposant pas ou plus des moyens d'exploiter directement leur terre, ou qui sont impliqués dans des activités hors agriculture – privilégient souvent la cession de leur terre en FVI. Cette dernière assure une rente régulière, susceptible de compléter les faibles revenus du ménage ou de contribuer à l'autosatisfaction alimentaire (dans le cas d'une rente foncière payée en nature), et le maintien de la terre dans le patrimoine familial, y compris comme un capital réalisable, en cas de besoin. Les ventes de terre permettent en effet de répondre aux situations de détresse, et n'ont donc lieu qu'en dernier recours. Ainsi, les demandeurs

potentiels sur le marché de l'achat-vente, en l'absence d'offre, sont souvent contraints de recourir à la prise en FVI. Ces acteurs sont majoritairement les sociétés commerciales (à capitaux étrangers aussi bien que nationaux) et les exploitations familiales marchandes.

LA LOI 17/2014

De nombreux acteurs ont été impliqués dans le processus d'élaboration du texte de la loi 17/2014. Le MADR a joué un rôle majeur, en étant notamment le principal rédacteur de la première version du projet de texte publiée en juillet 2013. Cependant, la présence de dérogations aux principes fondateurs de l'UE – mises en lumière par la Commission européenne – a nécessité plusieurs réexamens du projet de loi, impliquant de nombreux renvois entre les différents ministères, le Parlement, le Sénat et la Cour constitutionnelle.

Outre la mise en conformité avec les règles de l'UE, la loi 17/2014 a pour premier objectif de réglementer plus largement l'achat et la vente de terres agricoles rurales. Les objectifs secondaires apparaissent relativement imprécis, et diffèrent selon la source d'information. Ainsi, la loi indique (article 1) des objectifs de *«sécurité alimentaire, de protection des intérêts nationaux et des ressources naturelles»* et de *«fusion de parcelles en vue d'augmenter la taille des exploitations, favorisant la mise en place de fermes économiquement viables»*. Dans les médias, le gouvernement a présenté ses objectifs avec un discours principalement dirigé vers les petits agriculteurs, face aux craintes suscitées par l'ouverture du marché foncier aux investisseurs étrangers dans le cadre de la nouvelle loi foncière. Les objectifs seraient de lutter contre la spéculation foncière et de protéger les agriculteurs individuels face aux grands investisseurs.

Outre la mise en conformité avec les règles de l'UE, la loi 17/2014 a pour premier objectif de réglementer plus largement l'achat et la vente de terres agricoles rurales

La loi autorise désormais l'achat et la vente de terres agricoles aux citoyens et aux personnes morales des États membres de l'UE. Un droit de préemption est accordé: (i) au(x) copropriétaire(s); (ii) aux tenanciers; (iii) aux voisins propriétaires de leurs terres; et (iv) à l'État roumain à travers l'ADS. Le droit de préemption s'applique dans cet ordre, à prix égal. Si deux titulaires du droit de préemption de même rang proposent des prix différents, le vendeur

a la liberté de choisir celui qui offre le meilleur prix. Dans le cas où il s'agit d'un titulaire de rang inférieur, le vendeur n'est pas obligé de conclure la vente avec le titulaire de rang supérieur; il peut décider de relancer la vente, en publiant une nouvelle offre, avec le nouveau prix (supérieur). Lors de la seconde procédure, si le titulaire de rang supérieur ne peut pas s'aligner sur le nouveau prix, le titulaire de rang inférieur emporte la vente. Le prix offert par l'acheteur prime dans presque toutes les situations sur le droit de préemption. La seule mesure qui vise à protéger les bénéficiaires du droit de préemption est l'interdiction pour le vendeur de relancer une nouvelle procédure à un prix inférieur. Cela évite, par exemple, qu'un propriétaire dépose une offre de vente avec un prix très élevé, afin d'exclure ces bénéficiaires, puis qu'il conclut la vente avec la personne de son choix, à un prix inférieur. Si aucun des bénéficiaires du droit de préemption ne se manifeste dans les 30 jours suivant le dépôt de l'offre de vente, la vente est réputée «libre».

Au cours du processus d'élaboration du texte, et jusqu'à la version définitive de la loi 17/2014 publiée au Journal officiel, le 12 mars 2014, d'importantes modifications ont été apportées. Celles-ci suppriment notamment des dispositions envisagées dans des versions antérieures du texte: limite fixée à 100 ha de la surface autorisée à l'achat par des personnes physiques; critères de compétences applicables aux acquéreurs (obligation de justifier de connaissances ou d'expérience en matière d'agriculture); droit de préemption pour les jeunes agriculteurs (de moins de 40 ans); obligation de justifier d'un travail effectif de la terre, pour l'exercice du droit de préemption des locataires; sanctions prévues en cas de modification de l'usage des terres; discrimination entre personnes physiques et personnes morales.

DES PERSPECTIVES INCERTAINES DANS LA MISE EN ŒUVRE DE LA LOI

La procédure prévue pour un achat-vente est lourde:

- le vendeur doit constituer un dossier et le déposer à la mairie dont dépend le terrain, comprenant notamment: son titre de propriété, certifié par un

notaire; un extrait du registre foncier datant de moins de 30 jours; le certificat fiscal délivré par la mairie; un extrait du registre de commerce dans le cas d'une personne morale;

- la mairie affiche l'offre de vente dans ses locaux et/ou sur son site internet (obligation de publicité), et recherche les titulaires du droit de préemption;
- l'acheteur potentiel titulaire du droit de préemption fournit à la mairie les justificatifs qui prouvent qu'il bénéficie bien de ce droit (contrat de location par exemple);
- les Ministères de la défense et de la culture autorisent la mise en vente du terrain;
- la mairie enregistre chaque offre d'achat;
- le vendeur choisit l'acheteur; il peut aussi relancer la procédure de vente si des prix différents lui sont proposés;
- le vendeur et l'acheteur se rendent chez le notaire pour signer une promesse de vente;
- la mairie certifie que la procédure s'est déroulée conformément à la loi et transmet le dossier à la Direction agricole du *judeţ* si la superficie du terrain est inférieure à 30 ha, au MADR si cette superficie est supérieure à 30 ha;
- la Direction agricole du *judeţ* ou le MADR contrôle le dossier et approuve ou rejette la vente;
- l'avis final de conclusion de vente doit être authentifié par un notaire public ou une instance judiciaire;
- la mairie délivre le nouveau titre de propriété.

La loi impose des délais très stricts pour chacune de ces étapes. La complexité de la procédure, la multiplication des délais à respecter, le manque de moyens des mairies et directions agricoles, ainsi que certaines imprécisions dans le texte, laissent anticiper une mise en œuvre incertaine de la loi 17/2014, avec des risques de contestation de la procédure pouvant ralentir les transactions, voire provoquer des situations de blocage en cas d'invocation de la nullité d'une transaction.

L'absence de pièces justificatives

En premier lieu, les acteurs ne possèdent pas toujours toutes les pièces justificatives qu'ils sont sensés fournir.

a) Absence de titre de propriété. Le vendeur doit justifier de sa qualité de propriétaire d'une terre par un titre de propriété. Pourtant, de nombreux témoignages évoquent l'absence de titre officiel. Cela s'explique notamment par les successions, puisqu'il n'existe pas d'obligation légale d'enregistrer les terres au nom de l'héritier. Les frais de succession[5], ainsi que ceux relatifs à l'édition du nouveau titre de propriété (frais notariaux) sont relativement élevés, ce qui incite les héritiers à ne pas actualiser le titre. Les difficultés et conflits que peuvent rencontrer les héritiers entre eux au moment de la transmission de la terre peuvent également compliquer et retarder la réédition du titre de propriété. On observe ainsi de nombreuses situations où plusieurs générations se sont transmis la terre sans jamais passer par la procédure légale. Environ 45 pour cent des propriétaires de Roumanie ne possèdent pas de titre de propriété du fait de ce non-enregistrement des successions (Informateur Banque mondiale).

L'absence de titre de propriété s'explique aussi par le processus de restitution/redistribution, qui n'est pas totalement achevé et qui a généré de nombreux contentieux, dont certains sont toujours en cours. Par ailleurs, un inventaire des terres de chaque commune doit être réalisé par les mairies, en application de la loi 165/2013 (dans le cadre de «la restitution en nature ou par équivalent, des immeubles dont il a été abusivement pris possession durant la période communiste en Roumanie»). Cet inventaire a provoqué un blocage total de l'émission de titres de propriété pour les parcelles restituées/redistribuées jusqu'en septembre 2014.

Enfin, les pratiques informelles d'achat-vente de terre n'ont pas disparu, même si elles tendraient à diminuer fortement. Nous avons ainsi rencontré des acquéreurs qui ne disposent pas de titre de propriété[6], le contrat d'achat-

5 Impôt s'élevant à 1 pour cent du prix de la terre si la succession a lieu plus de 2 ans après le décès (pas d'impôt avant ces 2 ans). S'il y a plusieurs héritiers, chacun d'entre eux participe à l'impôt en fonction de la superficie dont il hérite (Bățăgoiu, 2013). Dans le cas où plusieurs générations se sont succédées sans actualisation du titre de propriété, l'impôt est multiplié par le nombre de générations (trois générations: 3 pour cent d'impôt). Aux impôts s'ajoutent également les honoraires du notaire qui enregistre la succession: 1 pour cent du prix de la terre.

6 À Ganesti par exemple, la mairie estime que 60 pour cent des propriétaires (successions et achats confondus) n'ont pas de titre de propriété.

vente ayant été rédigé manuellement sous forme de sous-seing privé. La principale raison invoquée est le coût de formalisation trop élevé.

Aujourd'hui, le titre de propriété est nécessaire pour bénéficier des aides de la PAC. Toutefois, pour ceux qui ne sont pas éligibles à ces aides, et ceux qui ne souhaitent pas en faire la demande, l'absence de titre de propriété ne devient un problème que lorsque la vente de terre est envisagée. Il est en effet rare, aujourd'hui, de réaliser une vente de terre sans passer par la procédure légale. Celle-ci prend en revanche beaucoup de temps, puisque le vendeur doit auparavant obtenir son titre[7]. S'il n'est pas en mesure d'assurer lui-même les frais d'enregistrement, l'acheteur peut y contribuer, voir les assumer entièrement, s'il en a la capacité.

b) Absence de contrat de location. Si un locataire souhaite faire valoir son droit de préemption lors d'une vente de terre, la loi 17/2014 indique qu'il doit justifier de sa qualité de locataire en fournissant un contrat de location formel. Depuis 2007, l'officialisation des contrats de location est devenue une pratique courante, notamment pour permettre l'obtention des aides de la PAC. Toutefois, elle n'est pas encore généralisée et nous avons rencontré plusieurs cas de location informelle. Cela s'explique notamment par des expériences passées de non-paiement de la rente; le propriétaire préfère alors ne pas faire de contrat et recevoir lui-même les aides PAC (en s'affichant comme le producteur exploitant la parcelle concernée) plutôt qu'un loyer. Une autre raison contribuant à expliquer la conclusion de contrats de location informels est l'obligation pour le propriétaire de payer un impôt sur les revenus issus du fermage (16 pour cent du revenu net).

c) Présence de «doublons». Il arrive qu'une même parcelle soit louée à plusieurs tenanciers, avec des contrats officiels, enregistrés en mairie. Les mairies ne sont pas tenues légalement de vérifier les cas de «doublons» et leur registre des contrats de location prend très souvent la forme d'un cahier où tout est consigné manuellement; il leur est donc difficile de vérifier qu'il n'existe pas déjà un locataire pour une parcelle donnée. Cela pose un réel

7 Avec tous les risques de conflits qui peuvent émerger: la délimitation des terres et le calcul de la surface entraînent souvent des conflits avec les voisins, ce qui retarde encore la procédure.

problème concernant le droit de préemption des locataires: en cas de vente du terrain, quel est celui qui peut faire valoir son droit de préemption? Les exploitants agricoles que nous avons rencontrés, concernés par ces situations, ont pour la plupart saisi la justice, parfois depuis presque 2 ans, sans obtenir de décision à ce jour.

d) Des terres non enregistrées au cadastre. Selon la loi 17/2014, le propriétaire doit fournir un extrait du registre foncier de moins de 30 jours, lors du dépôt de son offre de vente à la mairie. Or, actuellement, selon les chiffres de l'ANCPI (communication orale, 2014), seuls 9 pour cent de la surface labourable de la Roumanie sont effectivement enregistrés au cadastre. En Transylvanie, ce pourcentage est un peu plus élevé, du fait de la présence d'un livre foncier précis datant de la période pré-communiste (mis en place par l'empire Austro-Hongrois). Les géomètres s'appuient aujourd'hui sur ces anciens cadastres et livres fonciers pour l'enregistrement des terres dans le nouveau registre foncier. Seules 36 communes roumaines sur 3 137 possèdent un cadastre quasi complet (supérieur à 85 pour cent de la surface communale), à la suite d'un appui financier et technique de la Banque mondiale dans le cadre du projet CESAR (Complementing European Support for Agricultural Restructuring) (ANCPI, 2015). Cette initiative, lancée en 2007 et achevée en 2014, a pris en charge tous les frais d'enregistrement au registre foncier, y compris ceux liés à l'édition des titres de propriété manquants. Elle a par ailleurs servi de projet pilote au grand programme de généralisation du cadastre à l'échelle nationale qui était prévue à partir de 2015, pour une durée minimale de 20 ans selon la Banque mondiale. Fin 2016, ce programme n'a toutefois pas encore démarré[8].

La très faible proportion de terres enregistrées au cadastre s'explique d'abord par le fait que cette démarche n'est pas obligatoire pour les transmissions de terre par succession, ni pour les locations. La seule transaction qui nécessite

8 L'évaluation ex post du projet CESAR (Banque mondiale, 2015) révèle un fort désengagement du MADR sur les questions d'enregistrement des terres au cadastre. Elle souligne aussi des problèmes de gouvernance au sein de l'ANCPI, avec notamment une fréquence élevée de rotation du personnel, ainsi qu'un manque de coordination entre cette dernière et le MADR. Ces éléments peuvent contribuer à expliquer que le programme de généralisation du cadastre à l'échelle nationale ne soit pas encore démarré.

un enregistrement au registre foncier est la vente de terre (obligation contournée lors des ventes informelles). En outre, la loi 247/2005 précisait que l'enregistrement des terres au cadastre n'était pas obligatoire dans les cas de ventes visant le regroupement de parcelles (objectif de remembrement), ni dans les cas de ventes réalisées par les bénéficiaires du programme «rente viagère» (programme achevé en 2009[9]). Cette loi a été modifiée par la loi 71/2011, qui réaffirme l'obligation d'enregistrement au cadastre pour toutes les terres. Ces dispositions passées, associées au coût élevé de l'enregistrement, expliquent que la plupart des propriétaires ne font pas la démarche pour enregistrer leurs terres.

Des coûts de transaction élevés

Des coûts de formalisation élevés pourraient compromettre la mise en œuvre de la loi 17/2014 sur le terrain. Le vendeur et l'acheteur se partagent ces coûts (tableau 1), qui atteignent en moyenne 30 pour cent de la valeur du terrain (Râmniceanu, 2004), mais peuvent dépasser cette valeur pour les parcelles de petites superficies (voir également illustration *infra*). Leur importance obère les gains à attendre de la vente, et nécessite évidemment une capacité financière accrue pour les acheteurs.

Les coûts sont calculés sur la base de la valeur de la terre, estimée par les mairies selon la superficie, le type de sol, l'usage qui en est fait, la localisation. Si le prix réel est plus élevé que le prix estimé *ex ante*, il devient la référence pour les différents paiements; s'il est plus faible, l'estimation est maintenue.

9 La rente viagère, qui a été mise en place entre 2005 et 2009, était un instrument d'incitation financière pour la cession définitive ou temporaire des terres agricoles. Elle s'inscrivait dans une politique structurelle qui visait à réduire la population active agricole et le nombre d'exploitations agricoles, et à stimuler l'offre sur le marché de l'achat-vente de terres. Elle venait compenser de faibles pensions de retraite. Les bénéficiaires de cette aide sociale étaient les propriétaires de plus de 62 ans, sans aucune autre condition. Ils recevaient environ 100 EUR/ha/an en cas de vente, et ce jusqu'à leur mort, et 50 EUR/ha/an en cas de cession en FVI, jusqu'à la fin du contrat.

Table 1
Frais de formalisation pour un achat-vente

	PROCÉDURE ET INTERVENANTS	FRAIS
À la charge du vendeur	Paiement des impôts sur les terres en propriété, si cela n'est pas déjà fait, en vue d'obtenir l'attestation fiscale: État	Estimation: entre 5 et 40 EUR/ha/an
	Édition du titre de propriété (si cela n'est pas déjà fait): notaire et mairie	Environ 10% de la valeur de la terre
	Enregistrement des terres au registre foncier (si cela n'est pas déjà fait): géomètre + État	Entre 93 et 232 EUR/parcelle (la taille n'influence pas le prix a priori) pour le géomètre et 0,15% de la valeur pour l'État (0,5% pour les personnes juridiques)
	Paiement de l'impôt sur la transaction	Entre 2 et 3% de la valeur de la terre
À la charge de l'acheteur	Enregistrement de la transaction: notaire	Environ 15% de la valeur de la terre
	Emission d'un nouveau titre de propriété	(voir ci-dessus)
	Enregistrer le changement de propriétaire dans le registre foncier	(voir ci-dessus)

À titre d'exemple, un propriétaire qui n'aurait pas déjà enregistré sa terre au registre foncier, qui ne serait pas à jour dans le paiement des impôts et qui ne possèderait pas de titre de propriété, devrait assumer des frais d'environ 450 EUR pour la vente d'un terrain d'une valeur de 2 000 EUR (prix moyen d'1 ha en Transylvanie). L'acheteur de cette même parcelle aura quant à lui environ 590 EUR de frais à acquitter.

En pratique, il arrive souvent que l'acheteur prenne en charge les honoraires du notaire et les frais liés à l'enregistrement au registre foncier, si cela n'est pas déjà fait. Il s'agit là d'un argument supplémentaire pour inciter les petits propriétaires à vendre. Nous avons également rencontré nombre d'acteurs ayant volontairement déclaré un prix d'achat plus faible que celui effectivement payé, pour réduire le niveau d'imposition.

Les résultats du projet CESAR font apparaître que la prise en charge des coûts d'édition des titres de propriété et de l'enregistrement des terres au registre foncier induit une relance des transactions (augmentation de 52,5 points de

pourcentage entre 2008 et 2014, Banque mondiale, 2015). La Banque mondiale suggère donc que lors de la généralisation du cadastre à l'échelle nationale, les impôts liés aux successions soient supprimés, et que les honoraires des notaires pour l'enregistrement des terres et l'émission des titres de propriété soient fixes et d'un montant qui soit le plus faible possible.

Par ailleurs, le morcellement extrême de la propriété crée des coûts de transaction extrêmement élevés dans leur composante «coûts de recherche d'un partenaire». On observe ainsi des situations où un acheteur doit traiter avec une centaine de propriétaires pour reconstituer une parcelle de 10 ha d'un seul tenant.

Ces coûts élevés contribuent au renforcement de situations de tenure inversée, par leur effet dissuasif sur les ventes de terres.

Des institutions décentralisées non dotées de moyens suffisants

Nous avons déjà présenté les grands traits de la procédure, mais nous précisons ici les obligations que doivent respecter les mairies, afin d'en illustrer la complexité et la lourdeur. La mairie doit en effet:

- enregistrer la demande du vendeur avec l'offre de vente du terrain agricole et les documents justificatifs prévus par les textes d'application de la loi;
- créer, organiser et gérer le Registre des offres de vente des terrains agricoles rurales, en format papier et électronique, qui contient au moins les données d'identification du vendeur, la superficie du terrain, la catégorie d'utilisation de celui-ci, le prix de vente, l'emplacement de la parcelle (grâce à la documentation cadastrale), les procès-verbaux conclus pour chaque étape de la procédure, les attestations de vente libre des terrains;
- afficher l'offre de vente au siège de la mairie et sur son site internet;
- transmettre au MADR ou à la Direction agricole du *judeţ* la liste des titulaires du droit de préemption. Cette liste est à afficher au siège de la mairie et à poster sur son site internet;
- transmettre le dossier de vente au MADR ou à la Direction agricole du *judeţ*;
- dans les délais prévus par la loi, enregistrer et afficher au siège de la mairie et poster sur son site internet toutes les acceptations de l'offre du terrain, déposées par tout titulaire du droit de préemption;

- transmettre au MADR ou à la Direction agricole du *judeţ* toutes les communications de l'offre de vente du terrain, accompagnées par les documents prévus par les textes d'application (document prouvant l'identité pour une personne physique, extrait du registre du commerce pour une personne morale; copies légalisées des documents justificatifs qui attestent la qualité du titulaire du droit de préemption, selon le cas: actes de copropriété, contrat de location, acte de propriété des immeubles qui ont une frontière commune avec le terrain soumis à la vente, etc.);
- adopter les mesures nécessaires pour le déroulement, au siège de la mairie, des procédures qui concernent l'exercice du droit de préemption et de sélection de l'acheteur potentiel;
- produire le procès-verbal de constat du déroulement de chaque étape procédurale prévue par la loi;
- transmettre au MADR ou à la Direction agricole du *judeţ*, après la communication et l'enregistrement de la décision concernant la sélection par le vendeur du titulaire du droit de préemption potentiellement acheteur, le nom et les données d'identification de celui-ci, ainsi que les copies de tous les procès-verbaux;
- dans le cas où aucun titulaire du droit de préemption ne fait usage de son droit, délivrer à l'acheteur une attestation certifiant que les étapes de la procédure ont bien été respectées et que la vente est libre, et envoyer cette attestation au MADR ou à la Direction agricole du *judeţ*;
- transmettre au vendeur l'attestation accompagnée d'une copie certifiée conforme; une copie de cette attestation doit être transmise également au MADR ou à la Direction agricole du *judeţ*.

Sous l'ancienne législation, moins lourde, les délais étaient déjà très peu respectés, et de nombreux témoignages indiquent qu'une procédure de vente durait au minimum un an, les mairies étant déjà «débordées». La procédure est tout aussi lourde pour les Directions agricoles des *judeţs*. Tous les agents de ces deux institutions rencontrés lors de notre étude ont témoigné de leur crainte quant à la possibilité de respecter les procédures de mise en œuvre de la loi 17/2014. A ce jour, ces institutions n'ont reçu aucune dotation supplémentaire en moyens humains et financiers pour la mise en œuvre de la nouvelle procédure.

La diffusion de l'information entre les différents acteurs concernés semble également ne pas avoir été anticipée. Les mairies et directions agricoles n'ont reçu aucune formation ni directive spécifique, au delà du texte de loi. Les exploitants agricoles et propriétaires fonciers sont ceux qui semblent le moins informés sur la nouvelle législation. Les médias, et en particulier la télévision, sont leur principale source d'information. Seuls les dirigeants des sociétés commerciales (les investisseurs étrangers en premier lieu) montrent une bonne connaissance des modalités de la loi 17/2014, venant de leur insertion dans des réseaux sociaux, de leurs rapports privilégiés avec des avocats et des notaires, ainsi que de leur intérêt particulier pour l'achat de terre.

Les exploitants agricoles et propriétaires fonciers sont ceux qui semblent le moins informés sur la nouvelle législation

Notons par ailleurs, sans les développer ici, quelques éléments additionnels qui contribuent à anticiper des difficultés dans la mise en œuvre de la loi. Différents cabinets d'avocats ont pointé plusieurs dispositions spécifiques de la loi pouvant porter à confusion, ainsi que les forts risques de contentieux. Pour chaque situation dans laquelle les procédures et différents délais n'auront pas été parfaitement respectés, une saisie de la justice sera possible. Au vu des procédures décrites, trouver une faille, même minime, devrait s'avérer aisé pour les avocats, et on peut anticiper une augmentation du nombre des contentieux. On peut également anticiper des contournements de la loi, de fait d'ores et déjà observés lors de nos enquêtes. Nous avons ainsi rencontré des acteurs qui souhaitent choisir eux-mêmes le vendeur ou l'acheteur, et pouvoir négocier directement avec celui-ci. «*Pour être certain d'être prioritaire et de remporter la vente sur cette parcelle [devant le voisin qui semble également intéressé], je me suis arrangé avec le gars de la mairie: il a enregistré rapidement un contrat de location que je venais de signer avec le propriétaire. Pour que le propriétaire accepte, je lui ai donné une avance, et pour la mairie, la personne en question est mon cousin, ça marche comme ça ici*» (Informateur exploitant agricole).

QUELLES PERSPECTIVES D'IMPACT DE LA LOI 17/2014?

La loi 17/2014 pourrait contraindre davantage un marché de l'achat-vente déjà peu dynamique – un rôle non anticipé par les autorités publiques – ou pour le moins avoir un impact moindre que ce qui pourrait être anticipé en termes d'accaparement foncier.

- La loi pourrait avoir un effet de report de la vente chez les propriétaires vendeurs potentiels. Les médias martèlent l'idée que cette loi va provoquer une envolée des prix du foncier, et de nombreux propriétaires préfèrent attendre avant de vendre.
- La nécessité de fournir des documents officiels que nombre de propriétaires ne possèdent pas peut exclure la vente pour certains propriétaires et ralentir les transactions, du fait des lenteurs de l'administration pour l'édition de ces documents. L'absence de documents à fournir tant par les vendeurs que par les acquéreurs représente probablement le plus grand frein à l'application de la loi 17/2014 sur le terrain.
- Les coûts de transactions très élevés peuvent contribuer à freiner le désir de vente.
- Le nouvel environnement juridique pourrait engendrer des conflits fonciers et donc ralentir les transactions foncières d'achat-vente.
- L'absence de disposition incitant les propriétaires à vendre leurs terres (à travers, par exemple, un programme de type «rente viagère») entretient la faiblesse de l'offre sur le marché.
- Au regard des dispositions juridiques antérieures à la loi 17/2014, cette dernière ne devrait pas changer radicalement la demande émanant d'acquéreurs étrangers. Les avocats et notaires que nous avons rencontrés partagent à cet égard le même avis quant aux effets de la loi 17/2014 sur la venue d'étrangers: elle ne devrait pas provoquer un engouement particulier.

Si, comme nous l'anticipons, la loi 17/2014 freine un marché de l'achat-vente déjà peu actif, les configurations de tenure inversée devraient perdurer, voire s'amplifier. En effet, les sociétés commerciales qui souhaitent acheter pour pallier les contraintes de la prise en FVI vont devoir poursuivre la location de terre, aucune mesure pour réduire ces contraintes n'étant prévue par le nouveau cadre légal. De même, les propriétaires fonciers qui ne sont pas incités à vendre vont continuer à céder préférentiellement leurs terres en FVI.

La loi 17/2014 pourrait contraindre davantage un marché de l'achat-vente déjà peu dynamique – un rôle non anticipé par les autorités publiques – ou pour le moins avoir un impact moindre que ce qui pourrait être anticipé en termes d'accaparement foncier

Par ailleurs et surtout, la nouvelle législation, qui favorise l'achat par les exploitations les mieux dotées en capital financier et social risque de renforcer la concentration de la propriété foncière et de creuser l'écart existant avec les autres types d'exploitations. Notre analyse a révélé que seules les exploitations les mieux dotées financièrement peuvent a priori acheter des terres, lorsque l'offre existe. L'augmentation du prix des terres restreint l'achat de terres par les exploitations les moins dotées en capital financier. Les coûts de transaction très élevés vont dans le même sens. Enfin, les dispositions de la loi relative au droit de préemption – même si des titulaires du droit de préemption d'un rang supérieur souhaitent acheter la terre, c'est finalement celui qui propose le meilleur prix qui remporte la vente – favorisent également les exploitations les mieux dotées financièrement. Il n'est pas étonnant que les clauses relatives au droit de préemption du locataire soient très bien perçues par les dirigeants des sociétés commerciales. Ces dernières, en leur qualité de locataire en place, ont de bonnes chances de remporter la vente, même si un copropriétaire ou un voisin se manifeste. En revanche, de nombreux dirigeants de sociétés commerciales regrettent l'absence de dispositif dans la loi 17/2014 qui encouragerait la sortie de l'agriculture pour les petites exploitations, et donc la vente de leurs terres.

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CONCLUSION

Dans les débats actuels sur les avantages et inconvénients du développement de grandes exploitations, les arguments positifs en faveur de ces dernières sont qu'elles peuvent contribuer de manière significative à réduire la pauvreté: leurs investissements peuvent entraîner la création d'emplois, tant agricoles que non agricoles, conduire à des transferts de technologies, améliorer l'accès des producteurs locaux aux marchés à l'échelle locale, régionale et internationale et augmenter les recettes publiques par l'impôt et les droits à l'exportation. Le développement des configurations de tenure inversée peut également aller dans l'intérêt des cédants, lorsque la cession en FVI est la seule option pour valoriser les dotations foncières sans les aliéner définitivement, ou constituer une option permettant d'accéder à un revenu assuré et supérieur à celui qui

pourrait être obtenu en faire-valoir direct (lorsque le niveau de la rente est satisfaisant). Les cédants peuvent de plus éventuellement trouver un emploi auprès des preneurs, s'assurant ainsi une source supplémentaire de revenu (voir références *in* Colin, 2013). La situation roumaine conduit toutefois à une perspective plus pessimiste. Sur le marché du FVI, les sociétés commerciales sont à la fois en mesure d'imposer les types et termes des contrats, et de ne pas les respecter (réajustement unilatéral du fermage à la baisse, ou non versement de ce dernier, si la parcelle n'a pas pu être cultivée de leur fait) (Amblard et Colin, 2009). Sur le marché du FVI comme sur celui de l'achat-vente, la concurrence exercée par les grandes structures peut supplanter la demande émanant de l'agriculture familiale marchande. De plus, la capacité des grandes structures agricoles à fournir des emplois est beaucoup plus faible que celle de l'agriculture familiale, hormis pour les cultures pérennes (Deininger et Byerlee, 2012).

On peut finalement s'interroger sur l'objectif du Gouvernement roumain, d'un renforcement des exploitations familiales grâce aux dispositions de la loi 17/2014. La nouvelle législation encourage peu le développement de ces exploitations, alors même que ces dernières sont considérées par de nombreux experts comme les plus susceptibles de concilier efficience et équité.

En définitive, la mise en œuvre de la loi 17/2014 ne vient pas perturber en profondeur les dynamiques en cours, mais devrait les entretenir, voire les renforcer, du fait en particulier des procédures qu'elle impose – au-delà donc de son objectif initial principal d'ouverture du marché de l'achat-vente aux étrangers. Elle ne facilite pas une ouverture du marché de l'achat-vente, et favorise clairement les exploitations les mieux dotées en capital financier et humain, celles-là mêmes qui sont actuellement les acteurs des concentrations à grande échelle de la propriété ou, surtout, de l'exploitation. Le risque est donc d'observer un creusement de l'écart existant entre les sociétés commerciales et les exploitations familiales, laissant ces dernières à la marge, et les excluant progressivement de toute possibilité de développement. Nous sommes donc en présence d'une loi foncière qui ne se donne pas les moyens d'atteindre les objectifs affichés (fusion des parcelles, remembrement, augmentation de la sécurité alimentaire), et qui sert la promotion de modèles dits performants, intensifs en capital.

La mise en œuvre de la loi 17/2014 ne vient pas perturber en profondeur les dynamiques en cours, mais devrait les entretenir, voire les renforcer, du fait en particulier des procédures qu'elle impose – au-delà donc de son objectif initial principal d'ouverture du marché de l'achat-vente aux étrangers

Quels enseignements tirer de l'analyse qui précède, en termes de politiques publiques? Réglementer la prise en FVI par rapport au marché du FVI, et permettre plus d'équité entre le preneur et le cédant (par exemple, en fixant une rente minimale par hectare selon le type de culture et les rendements, en instaurant une obligation de publicité avant location afin de réduire les asymétries d'information, etc.), permettrait de limiter les configurations de tenure inversée ou pour le moins d'en réduire les impacts négatifs. Concernant le marché de l'achat-vente, des mesures d'incitation à la vente de terres pourraient permettre un déblocage partiel de l'offre sur ce marché[10]. Subventionner l'émission de titres de propriété formels et l'enregistrement au cadastre, plafonner les frais notariés pour les acteurs les moins dotés financièrement, limiterait les coûts de transaction et pourrait inciter certains acteurs à vendre ou acheter des terres. Une restructuration foncière, à l'amiable ou par remembrement, pourrait être envisagée conjointement au programme de généralisation du cadastre, dans l'objectif de redynamiser le marché de l'achat-vente (Savoiu *et al.,* 2015). Conjointement, des politiques d'appui à l'agriculture familiale, lorsqu'un retour vers le faire-valoir direct est envisageable, permettraient de stimuler le développement de cette agriculture (crédit, formation, aide à l'organisation du marché des prestations de services, par exemple).

Concernant la loi 17/2014, il serait intéressant de réintroduire le droit de préemption pour les jeunes agriculteurs, qui a été supprimé dans la version finale du texte, afin d'encourager un rajeunissement de la population agricole. Pour protéger les bénéficiaires du droit de préemption, l'introduction d'une mesure interdisant au vendeur de relancer une nouvelle procédure à un prix supérieur pourrait être proposée. De plus, la réintroduction d'une obligation de compétences ou de formation agricole pour l'achat de parcelles contribuerait à limiter les achats purement spéculatifs. De telles modifications, un temps envisagées par le gouvernement transitoire de Dacian Ciolos, ont finalement été mises en attente jusqu'à présent.

10 Dans la réforme du Code fiscal votée en septembre 2015, il est prévu que les collectivités locales aient la possibilité de lever une taxe applicable aux propriétaires de terrains agricoles non travaillés pendant une période minimale de deux années consécutives. La mesure étant récente, il n'est pas possible d'en évaluer l'impact sur le marché de l'achat-vente.

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IMPACT OF SECURED LAND RIGHTS ON CROP PRODUCTIVITY: Empirical evidence from Pakistan

IMPACT DES DROITS FONCIERS SÉCURISÉS SUR LA PRODUCTIVITÉ DES CULTURES: Démonstration empirique au Pakistan

REPERCUSIONES EN LA PRODUCTIVIDAD DE LOS CULTIVOS DE OTORGAR SEGURIDAD A LOS DERECHOS DE TIERRAS: Pruebas empíricas del Pakistán

ABSTRACT

In Pakistan, land distribution is highly skewed and about one-third of the farmers are tenant farmers. This paper aims to evaluate the impact of secured land rights on crop productivity. The current study is based on a comprehensive data set collected from 950 farmers from all four major provinces of Pakistan, i.e. Punjab, Sindh, Khyber Pakhtunkhwa (KPK), and Baluchistan. An empirical analysis was carried out by employing propensity score matching, to correct for the potential sample selection bias that might arise due to systematic differences between farmers with secure land rights (owners) and those

LAND RIGHTS

CROP PRODUCTIVITY

HOUSEHOLD INCOME

POVERTY LEVELS

PAKISTAN

RÉSUMÉ

Au Pakistan, la distribution des terres est fortement inégale et environ un tiers des agriculteurs louent leurs terres. Cet article vise à évaluer l'impact des droits fonciers sécurisés sur la productivité des cultures. L'étude actuelle repose sur un ensemble complet de données recueillies auprès de 950 agriculteurs des quatre principales provinces du Pakistan, à savoir le Punjab, le Sindh, le Khyber Pakhtunkhwa (KPK) et le Baluchistan. Une analyse empirique a été effectuée en employant une correspondance de propension, pour corriger le biais potentiel de sélection d'échantillon qui pourrait survenir en raison de différences systématiques

DROITS FONCIERS

PRODUCTIVITÉ DES CULTURES

REVENU DES MÉNAGES

NIVEAUX DE PAUVRETÉ

PAKISTAN

SUMARIO

En el Pakistán, la distribución de la tierra es muy asimétrica y alrededor de un tercio de los agricultores son arrendatarios. En este documento se pretende evaluar las repercusiones que tiene en la productividad de los cultivos otorgar seguridad a los derechos de tierras. El estudio actual se basa en un amplio conjunto de datos recopilados de 950 agricultores de las cuatro provincias principales del Pakistán, es decir, Punjab, Sindh, Khyber Pakhtunkhwa (KPK) y Baluchistán. Se llevó a cabo un análisis empírico recurriendo al apareamiento por índice de propensión para corregir el posible sesgo de selección de la

DERECHOS DE TIERRAS

PRODUCTIVIDAD DE LOS CULTIVOS

INGRESOS DE LOS HOGARES

NIVELES DE POBREZA

PAKISTÁN

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without secure land rights (tenants). The results indicate that farmers with secure land rights have higher crops yields, higher household income levels and lower poverty levels, compared with farmers without secure land rights. The paper's conclusion is that reform policies and initiatives to provide secure land rights would help to increase crops yields, in turn leading to an increase in household incomes and a decrease in poverty.

entre agriculteurs ayant des droits fonciers sécurisés (propriétaires) et ceux sans droits fonciers sécurisés (locataires). Les résultats indiquent que les agriculteurs ayant des droits fonciers sécurisés ont des rendements plus élevés, des niveaux plus élevés de revenu des ménages et des niveaux de pauvreté plus faibles, par rapport aux agriculteurs sans droits fonciers sécurisés. La conclusion du document est que les politiques de réforme et les initiatives visant à assurer des droits fonciers sécurisés contribueraient à accroître les rendements des cultures, ce qui entraînerait une augmentation des revenus des ménages et une diminution de la pauvreté.

muestra que pudiera surgir debido a diferencias sistemáticas entre los agricultores con derechos seguros a la tierra (propietarios) y aquellos sin derechos seguros a la tierra (arrendatarios). Los resultados indican que los agricultores con derechos seguros a la tierra tienen un mayor rendimiento de los cultivos, un mayor nivel de ingresos y un menor nivel de pobreza respecto de los agricultores sin derechos seguros a la tierra. La conclusión del documento es que las políticas e iniciativas de reforma para otorgar seguridad a los derechos de tierras contribuirían a aumentar el rendimiento de los cultivos, lo cual, a su vez, conduciría a un incremento de los ingresos en los hogares y a una disminución de la pobreza.

INTRODUCTION

In Pakistan, about 67 percent of the population lives in rural areas and is directly or indirectly dependent on agriculture for its livelihood. In rural communities, landownership is not only a symbol of status, power, and pride, but also a guarantee of better access to institutional support. At the time Pakistan gained independence from the UK in 1947, land distribution in Pakistan was highly skewed: less than 1 percent of the farms contained more than 25 percent of the total farmland. A large number of landowners were non-agricultural and did not make much direct contribution to land use, only extracting rents from the tenant farmers. About 65 percent of farm households owned about 15 percent of the agricultural land (Rogers, 1996). Tenants, including sharecroppers, cultivated about 50 percent of the agricultural land; most of these had little security and few rights (Rogers, 1996). One-third of farmers were tenants who cultivated the land under sharecropping and fixed-rent contracts (Jacoby and Mansuri, 2009).

At the time Pakistan gained independence from the UK in 1947, land distribution in Pakistan was highly skewed: less than 1 percent of the farms contained more than 25 percent of the total farmland

The uneven distribution of land in the country resulted in two major land reform efforts. The first attempt at reform occurred in 1959: the land ceiling for private ownership was fixed at 500 acres for irrigated land and 1 000 acres for unirrigated land. A major problem with this first reform initiative was that ceilings were fixed at the individual level rather than the family level: hence, rich families could still own extremely large tracts of land by registering land in the names of family members. A second attempt was made in 1972, in which the ownership ceiling was reduced from 500 acres to 150 acres for irrigated land and from 1 000 to 300 acres for unirrigated land. The execution of this promising second land reform was rather poor: less than 0.9 million acres of land was designated for redistribution; this was about one-third of the land redistributed as a result of the 1959 land reforms. Moreover, land ceilings remained in the names of individuals rather than families. Hence, a significant number of landowners still succeeded in maintaining their large land holdings by keeping ownership in the name of extended joint family members, and giving away only marginal and less productive lands for redistribution (Rao, 2007). Landownership in Pakistan therefore remains highly concentrated, with a small number of rich landlords.

The main types of land tenure arrangements in the country – and also predominantly in the study region – are owner-operated, with complete property rights, fixed rents, and sharecropping contracts. The owner-operated scenario with full rights comprises farmers owning and farming their own plots. Farmers cultivating their own plots have transfer rights, including the right to sell the plots. The fixed-rent contracts involve landowners renting out land to tenants[1] for a fixed rent. Sharecropping contracts are agreements between the landlord and the operating/tenant farmers. Part of the produce is given to the landowner as a fee for cultivating the land. The sharecropping arrangement appears to be less risky for the landowner, since this type of agreement permits the landowner to choose the crops the tenant plants (Basu, 1992). In our surveyed sample, sharecropping is usually a 50–50 arrangement, i.e. the landlord takes 50 percent of the total output and the sharecropper keeps 50 percent. Generally, the fixed-rent contracts are informal in nature and tend to cover between one and three cropping seasons, even though they can be spread over several years. The individual arrangements depend on the common understanding reached between the landlord and tenant (Jacoby and Mansuri, 2008).

Land rights affect the farm input application decisions made by farmers (Besley, 1995; Place and Hazell, 1993; Feder and Feeny, 1993). Studies in Asia have shown positive impacts of more secure land tenure on crop yields, household income, and poverty levels (Do and Iyer, 2002; Jacoby, Li and Rozelle, 2002; Feder, 1987; Carter and Yao, 2002; Feder and Onchan, 1987; Feder *et al.,* 1988). Similar studies have been conducted in Latin America (Deininger and Chamorro, 2004; Field et al., 2006; Lopez, 1997; Lanjouw and Levy, 1998; Alston, Libecap and Schneider, 1996; Bandiera, 2007; Fort, 2007), Eastern Europe (Rozelle and Swinnen, 2004), and Africa (Blarel, 1994; Goldstein and Udry, 2006). In African countries, some researchers have shown that land rights have made little or no impact on crop yields and household

1 The amount of rent varies depending on the soil fertility, the location of the land, the irrigation source and the previous deal, among other things. Normally the agreement is informal and for a time period of one year or two cropping seasons only, but it can be extended to next year or several years on mutual understanding between the owner and the tenant (Jacoby and Mansuri, 2008).

income levels (Migot-Adholla *et al.,* 1994; Pinkney and Kimuyu, 1994; Roth, Cochrane and Kisamba-Mugerwa, 1994; Golan, 1994).

More recent studies on the impact of tenure security on crop yields in Ethiopia found a positive impact from land certification on tenure security and crop yields (Deininger *et al.,* 2006). Similarly, a study in Uganda revealed that full landownership, compared with mere occupancy rights, results in a substantial positive impact on investment and the productivity of land use (Deininger and Ali, 2008).

Few studies to date have focused on the impact of secure land rights on crop yields, household income and poverty levels in Pakistan. The objective of this current study, therefore, is to estimate the impact of secure land rights on the main crop yields and household income in Pakistan. The rest of the paper is organized as follows: in Section 2, the methodology is presented; data and the descriptive statistics of variables are presented in Section 3; in Section 4, the empirical results are presented, and the paper concludes in Section 5 with some policy recommendations.

METHODOLOGY

In this study the empirical analysis has been carried out using the propensity score matching approach. The propensity score matching approach has been used to correct for the potential sample selection bias that might arise due to systematic differences between the owners and tenants. For propensity score matching, the expected treatment effect for the treated population is of primary significance. This effect may be given as:

The propensity score matching approach has been used to correct for the potential sample selection bias that might arise due to systematic differences between the owners and tenants

$$\tau \mid_{I=1} = E(\tau \mid I = 1) = E(R_1 \mid I = 1) - E(R_0 \mid = I = 1) \quad (1)$$

Here is the average treatment effect for the treated (ATT), R_1 denotes the value of the outcome for owners and R_0 is the value of the same variable for the tenants. The major problem is that we do not observe $(R_0 \mid = I = 1)$. Although the variance $[\tau^e = E(R_1 \mid I = 1) - E(R_0 \mid = I = 0]$ can be appraised, it is possibly a biased estimator.

In the absence of experimental data, the propensity score matching model (PSM) can be employed to account for the bias arising from sample selection (Dehejia and Wahba, 2002). The PSM is described as the restrictive likelihood that a farmer adopts the new technology, given pre-adoption features (Rosenbaum and Rubin, 1983). To generate the state of a randomized experiment, the PSM employs the unconfoundedness assumption, also known as the conditional independence assumption (CIA), which infers that after Z is controlled for, secured land tenure is random and is not correlated with the outcome variables. The PSM can be expressed as:

$$p(Z) = \Pr\{I = 1 \mid Z\} = E\{I \mid Z\} \quad (2)$$

where $I = \{0,1\}$ is the indicator for secure land tenure and Z is the vector of pre-secured land tenure characteristics. The restrictive spread of Z, given $p(Z)$, is similar in both groups of owners and tenants.

After approximating the propensity scores, the average treatment effect for the treated (ATT) can then be estimated as:

$$\tau = E\{R_1 - R_0 \mid I = 1\} = E\{E\{R_1 - R_0 \mid I = 1, p(Z)\}\} = E\{E\{R_1 \mid I = 1, p(Z)\} - E\{R_0 \mid I = 0, p(Z)\}\} \quad (3)$$

Several techniques have been developed to match participants with non-participants of similar propensity scores. Propensity score matching rests on two strong assumptions: the conditional independence assumption and the common support condition. More than one matching algorithm may be used to estimate the propensity score matching and, in the current analysis, nearest-neighbour matching, radius matching, kernel-based matching and Mahalanobis metric matching are used. The nearest neighbour matches with the closest neighbour only while the kernel-based matching takes the weighted average of all the non-secured land and then matches[2]. After matching, the matching quality has to be accessed and the standard errors and treatment

2 It is always better to apply more than one matching algorithm (Sianesi, 2004).

effects have to be estimated[3]. Several balancing tests have been used to assess the excellence of matching, such as cutbacks in the median absolute bias before and after matching, the absolute value of R^2 before and after matching, and the p-value of joint significance of covariates before and after matching[4] (Becker and Ichino, 2002; Caliendo and Kopeining, 2008).

Matching only balances the distribution of observed characteristics. If unobserved variables concurrently influence allocation into treatment and the outcome variable, unseen bias can arise and matching estimators are not robust (Rosenbaum, 2002). For the hidden bias, sensitivity analysis has been carried out[5]. This does not indicate that, in the presence of the hidden bias, the results are not robust: it only indicates the level up to which the owners and tenants will vary due to unobservable characteristics.

DATA, DESCRIPTION OF VARIABLES AND COMPARATIVE ANALYSIS

Data and description of variables

A comprehensive primary dataset was collected from all four provinces of Pakistan – i.e. Punjab, Sindh, Khyber Pakhtunkhwa (KPK) and Baluchistan – using a detailed questionnaire. In total, 950 farmers were interviewed between September and December 2014 by a team of trained enumerators. A description of the variables (mean and standard deviation) is presented in Table 1. About 38 percent of the farmers interviewed were from the Punjab, 27 percent from Sindh, 23 percent from KPK, and 11 percent from Baluchistan. About 91 percent of the farmers were from irrigated areas; the rest were from rainfed areas.

A comprehensive primary dataset was collected from all four provinces of Pakistan; 950 farmers were interviewed between September and December 2014 by a team of trained enumerators

3 It is important to note that the main purpose of matching is to balance the observed distribution of covariates across the treated and the untreated group (Bryson *et al.*, 2002).

4 It is important to note that the main purpose of matching is to balance the observed distribution of covariates across the treated and the untreated group (Bryson *et al.*, 2002).

5 This study addresses this problem of hidden bias using the bounding approach proposed by Rosenbaum (2002).

Table 1
Data and description of variables

VARIABLE	DESCRIPTION	MEAN	STD. DEV.
Province			
Punjab	1 if the farmer belongs to Punjab Province, 0 otherwise	0.38	0.016
Sindh	1 if the farmer belongs to Sindh Province, 0 otherwise	0.27	0.014
KPK	1 if the farmer belongs to KPK Province, 0 otherwise	0.23	0.013
Baluchistan	1 if the farmer belongs to Baluchistan Province, 0 otherwise	0.113	0.010
Demographic			
Age	Age of the farmer	43.47	0.417
Gender	1 if the respondent is male, 0 otherwise	0.93	0.007
Experience	Experience of the farmer in years	21.56	0.47
Family system	1 if joint family system, 0 otherwise	0.56	0.016
Migrant status	1 if the farmer is local, 0 otherwise	0.86	0.011
Human capital			
Education	Education of the farmer in years	7.91	0.18
Land status			
Tenancy status	1 if farmer is owner of land, 0 for tenant	0.81	0.012
Land holding	Land holdings of the farmer in acres	22.45	2.53
Land rented	Number of acres rented by the farmer	4.35	0.54
Land rented out	Number of acres rented out by the farmer	0.35	0.097
Tennant sharecropping	Number of acres sharecropped by the tenant	1.09	0.143
Owner sharecropping	Number of acres sharecropped by the owners	8.53	1.77
Wasteland	Area not suitable for cultivation in acres	2.31	0.83
Land rent rate	Land rent in rupees	25 962	921
Soil quality	1 if good quality soil, 0 otherwise	0.63	0.015

Table continues on next page →

VARIABLE	DESCRIPTION	MEAN	STD. DEV.
Land status			
Land fragmentation	1 if land is fragmented, 0 otherwise	0.62	0.016
Area type	1 if the area is irrigated, 0 for rainfed	0.912	0.009
Land slope	1 if the land is even, 0 otherwise	0.69	0.016
Canal area location	1 if the location is at the canal head, 0 otherwise	0.37	0.051
Legumes (rotation)	1 if the farmer has included legumes in crop rotation, 0 otherwise	0.08	0.01
Access to facilities and infrastructure			
Metal road access	1 if the household has access to metal road, 0 otherwise	0.84	0.012
Basic health unit	1 if the household has access to a basic health unit, 0 otherwise	0.38	0.016
Veterinary centre	1 if there is a veterinary centre in the village, 0 otherwise	0.256	0.02
Agriculture extension	1 if the household has access to agricultural extension services, 0 otherwise	0.112	0.010
Wealth/assets			
Tractor	1 if the household has a tractor, 0 otherwise	0.32	0.015
Tube well	1 if the household has a tube well, 0 otherwise	0.35	0.015
Car	1 if the household has a car, 0 otherwise	0.20	0.013
Refrigerator	1 if the household has a refrigerator, 0 otherwise	0.70	0.015
Livestock assets			
Bullocks	Number of bullocks owned by the household	0.274	0.02
Buffalo	Number of buffalo owned by the household	2.32	0.137
Cows	Number of cows owned by the household	2.12	0.166
Goats	Number of goats owned by the household	2.42	0.234
Sheep	Number of sheep owned by the household	0.902	0.244
Total livestock	Total number of livestock owned by the household	8.03	4.58

Source: 2014 Survey Results

The average age of the sampled farmers was 43 years, while the mean farming experience was 22 years. The average education level was about eight years of schooling. About 56 percent of the farmers live in the joint family system and the rest in the nuclear family system. In the study area, 81 percent of the farmers were landowners and the rest, 19 percent, were tenant farmers. About 86 percent of the farmers were local and the rest were migrant farmers. The majority of landowners were local while the tenants were mostly migrant farmers. Migrant farmers are those who have come to the village from other parts of Pakistan, i.e. those farmers who were not born in the current village. The average land holding of the sampled farmers was about 22 acres. The average size of the land rented by the farmers was four acres, and some wasteland was also rented out, i.e. 0.35 acres. The average size of land shared in was one acre, and the average land shared out was eight acres.

The mean land rent was 25 962 Pakistani rupees per acre, but rents vary with the soil quality and location of the land[6]. About 63 percent of the farmers have good quality soil and 37 percent have poor quality soil. Land fragmentation is a major problem in Pakistan: approximately 62 percent of the farmers have fragmented land, and 69 percent of the farmers have uneven land. Only 37 percent of the farmers had land located at the head of the canal; the rest did not. Only 8 percent of the farmers have included legumes in their crop rotation to enhance soil fertility. Among the surveyed households, about 93 percent of the farmers were male and only 7 percent were female.

In our study area, about 84 percent of the farmers have access to a metal road. Access to facilities and extension services are significant determinants of awareness of new technology, and hence productivity. In the study, about 38 percent of the villagers have basic health care facilities, but only 11 percent of the households have access to agricultural extension services. Wealthier farmers use inputs that increase farm productivity: about 32 percent of the households in the study area own a tractor, 35 percent own a tube well, 20 percent own a car, and 70 percent own a refrigerator.

6 The good quality soils attract higher rents; in addition, the lands located at the canal heads attract higher rents, and vice versa.

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Livestock is an important source of investment and savings, cash income and agricultural inputs such as manure and draught animals. The average number of bullocks owned was 0.27 per household, buffalo owned was 2.32, cows owned was 2, goats owned was 2.42, and the average number of sheep owned per household was 1.

Comparative analysis

The differences and t-values in the key characteristics of the landowner farmers and the tenant farmers are summarized in Table 2. The difference in area type (irrigated versus non-irrigated) is positive and significant at the 10 percent level of significance, indicating that owner-farmers mostly own irrigated areas. The difference in age is negative and significant, signifying that landowner farmers were mostly younger compared with tenant farmers. The difference in education is positive and highly significant at the 1 percent level of significance, indicating that landowners have much higher education levels compared with tenants. The difference in experience is negative and significant, indicating that tenant farmers were more experienced than landowners.

Table 2
Difference in the key characteristics of the owners and tenants

VARIABLE	OWNER	TENANT	DIFFERENCE	T-VALUES
Demographic				
Age	40.45	45.86	–5.43*	–1.72
Experience	17.91	25.52	–8.39***	–2.82
Family system	0.48	0.65	–0.17***	–2.79
Human capital/education				
Education	11.53	5.26	6.28***	3.50
Land assets				
Land holding	22.45	0.00	22.45***	7.49
Land rented	0	4.35	–4.35***	–2.53
Land rented out	0.35	0.00	0.35	0.65
Area/land type	0.93	0.87	0.06*	1.88
Soil quality	0.74	0.55	0.19**	2.34
Land fragmentation	0.52	0.73	–0.21***	3.17
Land slope	0.75	0.63	0.13*	1.52
Canal area location	0.51	0.26	0.25***	3.18
Legumes	0.17	0.12	0.05*	1.92
Access to facilities and infrastructure				
Metal road	0.87	0.81	0.06	0.78
Basic health unit	0.45	0.31	0.14***	2.59
Veterinary centre	0.32	0.17	0.15***	3.17
Agriculture extension	0.14	0.09	0.05*	1.92
Assets/wealth				
Tractor	0.46	0.18	0.28***	3.11
Tube well	0.54	0.16	0.38***	2.65
Car	0.35	0.05	0.35***	3.76
Refrigerator	0.84	0.56	0.28***	2.85
Livestock assets				
Total livestock	6.43	10.54	–4.76***	–3.19

Note: The results are significant at the 1% (***), 5% (**) and 10% (*) levels, respectively

Authors' own calculations

The difference in family systems was negative and highly significant at the 1 percent level of significance, showing that tenant farmers mainly live in the joint family system. The difference in land holding is positive and highly significant at the 1 percent level of significance[7]. The difference in rented land is negative and significant, while the difference in rented out land is positive and non-significant.

The difference in soil quality is positive and significant at the 5 percent level of significance, showing that landowners have better quality soils than tenant farmers. The difference in land fragmentation is negative and significant, indicating that tenant farmers' farmland was mostly fragmented. The difference in village infrastructures like metal roads, basic health units, veterinary centres and agriculture extension are positive and significant, indicating that landowner farmers have better access to improved village infrastructure compared with tenant farmers.

The difference in slope is positive and significant, highlighting that landowners mostly farm even/flat land. The difference in canal area location is positive and highly significant, demonstrating that owner-farmers' lands were mostly located at the canal heads. The difference in legume inclusion in crop rotation is positive and significant, showing that the landowner farmers more often include legumes in their crop rotations than tenant farmers. The difference in the household ownership of tractors, tube wells, cars and refrigerators is positive and highly significant, indicating that landowner farmers have more assets compared with tenants. The difference in livestock ownership is negative and highly significant at the 1 percent level of significance, indicating that owners have less livestock than tenants.

The details regarding the owner-tenant sharecropping system in Pakistan are presented in Table 3. The owner provides the land and the land preparation, and seed is the responsibility of the tenant. Irrigation, fertilizers and pesticides are shared 50–50 between the landowners and tenants. The hoeing and labour are the responsibility of the tenant farmers. In the output, both the owners and the tenant have an equal share.

7 The tenants have none of their own land holdings, they mostly rent and share lands.

Table 3
Owner–tenant sharecropping

INPUT–OUTPUT SHARE	OWNER SHARE (PERCENTAGE)	TENANT SHARE (PERCENTAGE)
Land owned	100	0
Land preparation	0	100
Seed inputs	0	100
Irrigation	50	50
Fertilizer inputs	50	50
Pesticide spray inputs	50	50
Hoeing	0	100
Labour	0	100
Output	50	50

Source: 2014 Survey Results

The determinants of the land rights are summarized in Table 4 (logit estimates: variable, coefficient, t-values). The area type (1 for the irrigated area, 0 otherwise) is positive and highly significant at the 1 percent level of significance, confirming that landowners mostly farmed irrigated areas while the tenants farmed rainfed land. The age coefficient is negative and highly significant at the 1 percent level of significance, indicating that landowner farmers were mostly younger farmers. The education coefficient was positive and highly significant at the 1 percent level of significance, signifying that landowner farmers have higher education levels than tenant farmers. The coefficient of the family system is negative and significant at the 5 percent level of significance. The coefficient of the soil quality dummy is positive and significant at the 10 percent level of significance, showing that landowner farmers cultivated good quality soils. The land fragmentation coefficient was negative and significant at the 5 percent level of significance. The slope dummy (even slope = 1, otherwise 0) is positive and highly significant, indicating that owners farmed level land.

The results for the canal area location and legume crop rotation are not significantly different from zero. The result for gender, though positive, was

non-significant. The results regarding village infrastructure are positive and significant, confirming that landowner farmers have good infrastructure. The coefficients of the household's tractor ownership are positive and highly significant at the 1 percent level of significance. The results for the tube well ownership are non-significant. The results for the car and refrigerator are positive and significant, indicating that landowners have more assets compared with tenants.

Livestock is an important source of income and investment for poor peasants. The livestock ownership is negative and significant, indicating that landowner farmers have less livestock compared with tenant farmers. The tenants keep the livestock for, among other things, food, raw materials and as a source of income in times of need (savings). The value of the constant is positive and significant. The LR chi-square value is 0.28, indicating that a 28 percent variation in the dependent variable is due to independent variables included, and vice versa. The LR chi-square is positive and highly significant at the 1 percent level of significance, indicating the robustness of the variables used in the model.

STATISTICAL ANALYSIS APPLYING PROPENSITY SCORE MATCHING

The impact of the land rights on crop yields, household income, and poverty levels, was estimated by employing the propensity score matching approach (see Table 4). Two different matching algorithms, i.e. radius matching and kernel-based matching, are applied, because it is always better to use more than one matching approach. The average treatment effect for the treated (ATT) results for crop yields are positive and significant, indicating that landowner farmers have higher wheat, rice, and cotton yields[8].

8 The average treatment effect for the treated is the difference in the outcome of the similar households, indicating how much the difference in outcome is with the similar propensity score.

Table 4
Determinants of the land rights (logit estimates)

	VARIABLE	COEFFICIENT	T-VALUES
Province	Punjab	0.03*	1.72
	Sindh	–0.04***	–2.51
	KPK	0.01	0.84
Demographic	Age	–0.03***	–2.90
	Gender	0.01	0.54
	Family system	–0.02**	–2.16
Human capital/education	Years of schooling	0.02***	3.14
Land	Soil quality	0.01*	1.91
	Land fragmentation	–0.02**	2.12
	Slope	0.02***	3.47
	Area/land type	0.01***	2.63
	Canal area location	0.03	0.85
	Legumes rotation	0.02	1.39
Access to facilities and infrastructure	Metal road	0.02*	1.86
	Basic health unit	0.03**	2.14
	Veterinary centre	0.02***	3.18
	Agriculture extension	0.01**	2.27
Wealth/assets	Tractor	0.02***	3.05
	Tube well	0.01	1.44
	Car	0.02*	1.95
	Refrigerator	0.01***	2.56
Livestock assets	Total livestock	–0.02**	2.19
	Constant	0.03***	3.15
	R-square	0.28	
	LR chi-square	286	
	Total number of observations	917	

Note: The results are significant at the 1% (***), 5% (**) and 10% (*) levels, respectively

Authors' own calculations

Agriculture is the backbone of Pakistan's economy and wheat, rice and cotton are the most important food and cash crops grown in the country. Wheat and rice play an important role in ensuring national food security, while cotton is important in earning valuable foreign exchange. The average treatment effect for the treated (ATT) is the difference in the outcome of the landowner farmer and tenant farmers with the similar propensity score. The ATT results for the wheat yield are 2.35–2.71 maunds per acre[9]. The results are highly significant at the 1 percent level of significance showing that landowner farmers have higher yields compared with similar tenant farmers. As wheat is an important food security crop, an increase in yield due to secure land rights can be a good incentive for policy-makers to carry out land reforms across Pakistan, given that one-third of the farmers are tenant farmers with no secure land rights.

Agriculture is the backbone of Pakistan's economy and wheat, rice and cotton are the most important food and cash crops grown in the country.

Similarly, the ATT results for the rice yields are positive and significant, indicating that owners have higher rice yields in the range of 2.15–2.44 maunds per acre. Rice is an important staple crop and increases in rice yield can help rural households to improve their food security. Cotton is an important cash crop and provides a significant contribution to the agriculture and textile exports of Pakistan. The cotton yields are positive and significant, signifying that landowner farmers have higher cotton yields in the range of 1.64–2.30 maunds per acre compared with tenant farmers. Similarly, the ATT results for household incomes are positive and significant in both the matching algorithms, showing that landowner farmers have high income levels – in the range of Pakistani rupees 5 327–7 438. The higher income levels are mainly due to higher crop yields arising from having secure land rights. The ATT results for household poverty are negative and significant, demonstrating that poverty levels among landowner farmers are low: in the range of 6–9 percent. This finding has important policy implications in that secure land rights can help to improve food security and reduce rural poverty.

Higher income levels are mainly due to higher crop yields arising from having secure land rights

Secure land rights can help to improve food security and reduce rural poverty

9 One maund is equal to about 37.3 kg.

The critical level of hidden bias, shown in Table 5, illustrates the level up to which the owners and tenants differ due to unobservable factors. The critical level of hidden bias of 1.20–1.25 indicates that landowner farmers and tenant farmers differ up to the level of 20–25 percent due to unobservable variables. From the results, it can be concluded that the results are robust, as the levels of the unobserved bias are comparatively lower. The number of treated and the number of controls are also shown in Table 5.

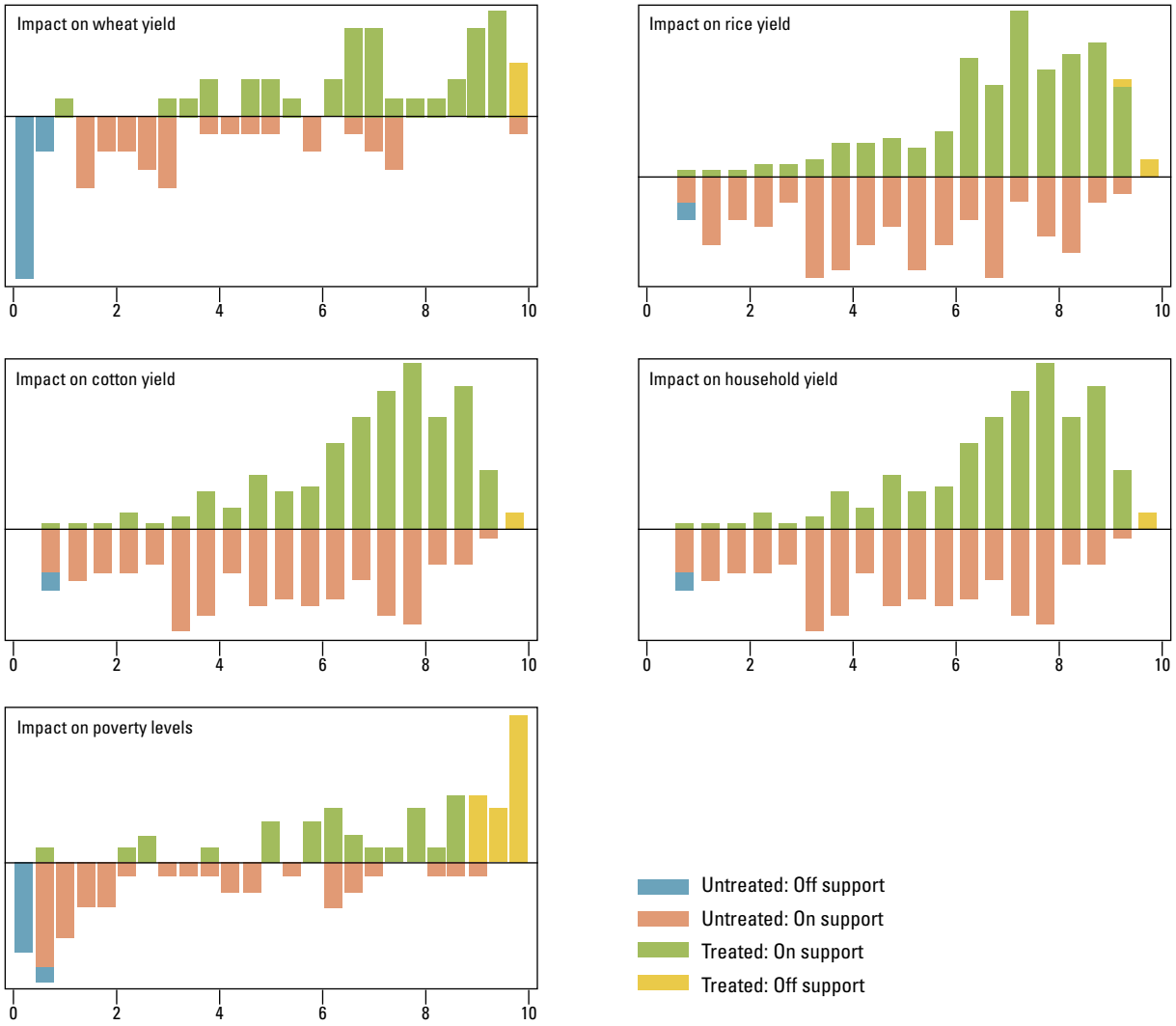
Table 5
Impact of the land rights on crop yields, household income and poverty levels

MATCHING ALGORITHM	OUTCOME	ATT	T-VALUES	CRITICAL LEVEL OF HIDDEN BIAS	NUMBER OF TREATED	NUMBER OF CONTROL
Kernel-based matching	Wheat yield	2.35***	3.26	1.35–1.40	523	174
	Rice yield	2.15***	2.54	1.20–1.25	523	174
	Cotton yield	1.64*	1.77	1.55–1.60	523	174
	Household income	5 327***	2.61	1.25–1.30	523	174
	Poverty	–0.06*	–1.92	1.40–1.45	523	174
Radius matching	Wheat yield	2.71***	2.65	1.75–1.80	628	149
	Rice yield	2.44**	2.11	1.25–1.30	628	149
	Cotton yield	2.30*	1.92	1.30–1.35	628	149
	Household income	7 438**	2.30	1.55–1.60	628	149
	Poverty	–0.09*	–1.73	1.45–1.50	628	149

Authors' own calculations

Figure 1 indicates the imposition of the common support condition, the number of treated and the number of controls on and off support.

Figure 1
Propensity score matching graph



After matching, the quality of matching has been checked by employing a few balancing tests; the results of these are summarized in Table 6. The median absolute bias before matching is quite high and is quite low after matching; before matching the bias is in the range of 17–25 percent. Moreover, after matching, the bias is in the range of 4–8 percent. The percentage bias reduction indicates that after matching, covariates have been balanced and both groups are quite similar to each other. The value of R-square is quite high before matching and very low after matching, indicating that after matching, the covariates have been balanced and there are no systematic differences between the landowner farmer and the tenant farmers. Similarly, the joint significance of covariates should always be accepted before matching and rejected after matching, indicating that after matching, both landowner farmers and tenant farmers are very similar to each other.

Table 6
Indicators of covariates balancing (before and after matching)

MATCHING ALGORITHM	OUTCOME	MEDIAN ABSOLUTE BIAS BEFORE MATCHING	MEDIAN ABSOLUTE BIAS AFTER MATCHING	PERCENTAGE BIAS REDUCTION	VALUE OF R-SQUARE BEFORE MATCHING	VALUE OF R-SQUARE AFTER MATCHING	JOINT SIGNIFICANCE OF COVARIATES BEFORE MATCHING	JOINT SIGNIFICANCE OF COVARIATES AFTER MATCHING
Kernel-based matching	Wheat yield	22.50	5.64	74.93	0.276	0.001	0.002	0.337
	Rice yield	23.12	7.38	68.08	0.243	0.002	0.000	0.285
	Cotton yield	24.80	8.69	64.96	0.318	0.003	0.001	0.316
	Household income	19.36	5.31	72.57	0.276	0.002	0.003	0.294
	Poverty	21.54	6.21	71.17	0.325	0.003	0.001	0.304
Radius matching	Wheat yield	18.36	5.39	70.64	0.274	0.002	0.001	0.285
	Rice yield	19.57	4.79	75.52	0.359	0.001	0.002	0.317
	Cotton yield	20.46	5.38	73.70	0.273	0.002	0.001	0.294
	Household income	21.73	4.60	78.83	0.298	0.001	0.003	0.346
	Poverty	22.58	4.78	78.83	0.243	0.000	0.002	0.273

Authors' own calculations

CONCLUSIONS

In Pakistan, land distribution is highly skewed: one third of the farmers are tenant farmers, having no secure land rights (Jacoby and Mansuri, 2009). In the past, two attempts at land reform were made but with little effectiveness. The current study is based on a comprehensive dataset collected through a field survey of 950 households across Pakistan. From the empirical results, it can be established that landowner farmers have more assets as well as institutional support compared with tenant farmers. The landowner farmers tend to keep the land with good soil quality for themselves and rent out poor quality land to the tenant farmers. The empirical analysis was carried out using the propensity score matching approach, which correct for the potential sample selection bias that might arise due to systematic differences between the owners and tenant farmers. PSM generates the condition of a randomized experiment and then matches similar farmers in both groups, i.e. landowner farmers and tenant farmers; hence, it reduces the potential sample selection bias, and the results are robust.

The empirical results show that households with secure land rights have higher wheat, rice and cotton yields (Do and Iyer, 2002; Jacoby, Li and Rozelle, 2002; Deininger and Chamorro, 2004; Fort, 2007; Rozelle and Swinnen, 2004; Deininger *et al.,* 2006; Migot-Adholla, *et al.,* 1994; Pinkney and Kimuyu, 1994). Findings suggest that an effective land reform policy is important for improving food security and livelihoods, and reducing poverty, as secure land rights will help to increase food and cash crop yields. The increase in yield can lead to increased household income. The landowner farmers have higher income levels (in the range of Pakistani rupees 5000–7000) mainly arising from an increase in food and cash crop yields due to secure land rights. The poverty levels are lower for landowners (in the range of 6–9 percent), signifying that secure land rights can help to reduce household poverty levels. Similarly, the agricultural policies that help both landowner farmers and small farmers need to be supported with the provision of inputs at subsidized rates, as well as institutional support.

Through secure land rights, farmers have better access to institutional support. Secure land rights can help farmers become eligible for credit from

formal sources, and farmers with secure land rights have more extension services available to them, because extension officials usually visit landowner farmers. From the empirical results, it can be concluded that the government needs to carry out further land reforms in Pakistan, as the two previous attempts have not been effective.

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A COMPARATIVE ANALYSIS OF CUSTOMARY LAND ASSOCIATIONS AND SUSTAINABILITY ISSUES IN PAPUA NEW GUINEA

ANALYSE COMPARATIVE DES ASSOCIATIONS FONCIÈRES COUTUMIÈRES ET DES QUESTIONS DE DURABILITÉ EN PAPOUASIE NOUVELLE-GUINÉE

ANÁLISIS COMPARATIVO DE LAS ASOCIACIONES DE TIERRAS CONSUETUDINARIAS Y LAS CUESTIONES RELATIVAS A LA SOSTENIBILIDAD EN PAPUA NUEVA GUINEA

ABSTRACT

CUSTOMARY LAND ASSOCIATIONS

INCORPORATED LAND GROUPS

SUSTAINABILITY

PAPUA NEW GUINEA

This paper analyses the perceptions of 129 customary landowner-households and stakeholders, interviewed through stratified random sampling, concerning the sustainability of customary land associations in Papua New Guinea (PNG), a South Pacific country with a population of about 7.5 million. PNG has a dual land tenure system where customary land accounts for 97 percent of all land in the country. The first of the two hypotheses tested reveals that Incorporated Land Groups (ILGs) are the most preferred land associations operating under the country's existing customary land administration policies and procedures. However, the second hypothesis, which states 'that there

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ASSOCIATIONS FONCIÈRES COUTUMIÈRES

GROUPES FONCIERS INTÉGRÉS

DURABILITÉ

PAPOUASIE-NOUVELLE-GUINÉE

Cet article analyse les perceptions de 129 propriétaires fonciers coutumiers et parties prenantes, interrogés par échantillonnage aléatoire stratifié, sur la durabilité des associations foncières coutumières en Papouasie-Nouvelle-Guinée (PNG), un pays du Pacifique Sud avec une population d'environ 7,5 millions. La PNG dispose d'un régime foncier double où les terres coutumières représentent 97 pour cent de l'ensemble des terres du pays. La première des deux hypothèses testées révèle que les groupes fonciers intégrés (*Incorporated Land Groups*, ILG) sont les associations foncières préférées qui fonctionnent selon les politiques et procédures

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ASOCIACIONES DE TIERRAS CONSUETUDINARIAS

GRUPOS DE TIERRA INCORPORADA

SOSTENIBILIDAD

PAPUA NUEVA GUINEA

En este documento se analizan las percepciones de 129 familias propietarias de tierras consuetudinarias y partes interesadas que, a través de un muestreo aleatorio estratificado, fueron entrevistadas respecto de la sostenibilidad de las asociaciones de tierras consuetudinarias en Papua Nueva Guinea, un país del Pacífico Sur con una población de alrededor de 7,5 millones. Papua Nueva Guinea cuenta con un sistema dual de tenencia de la tierra donde las tierras consuetudinarias representan el 97 por ciento de todas las tierras del país. La primera de las dos hipótesis probadas revela que los Grupos de tierra incorporada son las asociaciones de tierras, que funcionan en consonancia con las políticas y

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is a positive correlation between land governance and sustainable land development' was not supported by data, given the negative and weak Pearson's correlation coefficient (r) of –0.368, that was statistically significant at the 0.057 level (2-tailed). The paper suggests measures, including adherence to the *Voluntary Guidelines on the Responsible Governance of Tenure* (VGGT), by which PNG and other countries that have huge tracts of customary land can improve land tenure governance and achieve sustainable development on customary land.

existantes d'administration foncière coutumière du pays. Cependant, la seconde hypothèse, qui stipule «qu'il existe une corrélation positive entre la gouvernance foncière et le développement durable des terres» n'a pas été corroborée par les données, compte tenu du coefficient de corrélation négatif et faible de Pearson (r) de -0,368, statistiquement significatif au niveau de 0,057. Le document suggère de prendre plusieurs mesures, incluant l'adhésion aux *Directives volontaires pour une gouvernance responsable des régimes fonciers* (VGGT), à travers lesquelles, la PNG et d'autres pays qui ont de grandes surfaces de terres coutumières peuvent améliorer la gouvernance foncière et adopter un développement durable sur ces terres coutumières.

procedimientos nacionales existentes en materia de administración de tierras consuetudinarias, que prefiere la mayoría. Sin embargo, la segunda hipótesis, que afirma que "existe una correlación positiva entre la gobernanza de la tierra y el desarrollo sostenible de la tierra", no obtuvo el apoyo de los datos, debido a un coeficiente de correlación de Pearson (r) negativo y débil de –0,368, que, en el nivel (bilateral) de 0,057, fue significativo desde el punto de vista estadístico. El documento sugiere la adopción de medidas, cono la adhesión a las *Directrices voluntarias sobre la gobernanza responsable de la tenencia de la tierra*, a través de las que Papua Nueva Guinea y otros países que tienen grandes extensiones de tierras consuetudinarias pueden mejorar la gobernanza de la tenencia de la tierra y lograr un desarrollo sostenible en tierras consuetudinarias.

INTRODUCTION

Papua New Guinea (PNG) has a two-tier land tenure system (LTS). Alienated Land Tenure (ALT) accounts for 3 percent of the total, and is divided between state land (2 percent) and private/freehold land (1 percent). The more dominant Customary Land Tenure (CLT) accounts for 97 percent (Lakau, 1991:13) of the system. Customary land (CL) is held by tribes, clans and land groups and its operation and ownership are governed by local customs and traditional values and beliefs (Karigawa, 2015; Dixon, 2006; Power, 2001). Consequently, it may be argued that the frequent use of the power of eminent domain by government for the compulsory acquisition of customary land – ostensibly in the public interest for the purpose of land reform – is a policy that works against the customary land tenure. As might be expected, the reforms have had their successes and failures and not all the reforms were welcomed by the actual landowners (Kalinoe, 2001). In order for the reforms to succeed, the Government introduced some mechanisms, including Incorporated Land Groups (ILGs), designed to promote economic development on customary land.

The ILG mechanism is empowered by its own enabling legislation: the Incorporated Land Groups Act 1974, as amended in 2009. Legally incorporated ILGs are the mechanism often used to represent landowners and to capture the economic benefits of resource developments (Kwapena, 2014). For example, Section 13 of the Act empowers customary landowners to enter into development agreements with other stakeholders to attract maximum benefits to the landowners without losing their land. The process is applied through a lease–leaseback scheme, which was abused in recent years when more than 5 million hectares of customary land were grabbed illegally by foreign investors (http://www.coi.gov.pg/sabl.html, accessed on 24 January, 2017; Filer, 2012), under the guise of economic development on customary land operated through some small business and agricultural leases (SBALs).

The fact that many customary landholders have been victims of predatory companies and corrupt government officials prompted a response from the Prime Minister of Papua New Guinea, the Honourable Peter O'Neill, promising to deal decisively with foreigners who are found to be land grabbers in the country. Yet, there is also a phenomenon of non-state expropriation involving

customary landholders who indulge in forcefully asserting their traditional property rights on holders of state property rights on the same piece of land, sometimes resulting in violent land disputes (Larcom, 2016). Such ownership contests are strong indications that land associations in PNG have serious challenges with customary land tenure governance in the country, an issue that justifies the present paper.

According to the ILG Act 1974, Section 13(2)(c), a registered land group has the power to use and manage the land, or enter into agreements for the use or management of it. A development agreement would normally be akin to a building lease of up to about 50 years and in any case less than the standard 99-year long lease granted by law in PNG. The development agreement (e.g. building lease) enables the sub-lessee to erect buildings on the land, subject to Town Planning approval. The lease may be renewed or extended by negotiations between the parties, but all improvements (structures) on the land automatically revert to the headlessor (landlord) after the expiry of the lease, subject to specific provisions in the lease. The lease agreement is the main evidence that a court of law will require from any party seeking to enforce any relevant lease covenant(s) by another party or parties to the agreement in case of disputes. For further details on commercial lease covenants, Part 2 of the Landlord and Tenant Act 1954 may be consulted, although it is always advisable to seek professional legal advice from legal experts.

ILG incorporation in PNG is a process that begins with the preparation of a constitution comprising the rules governing the particular Incorporated Land Group (http://dfat.gov.au/about-us/publications/Documents/MLW_VolumeOne_Bookmarked.pdf, accessed 21 January, 2017; Burton, 1991). The constitution must include the following details: (i) the name of members of the group (ii) the name of its custom (iii) the qualifications for membership of the group (iv) the nature of the controlling body of the group, and (v) the procedures for settling disputes. Following the successful hearing of comments or objections by members of the public, the group may be registered with the Registrar of Incorporated Land Groups and become legally incorporated. As a legal entity an Incorporated Land Group can make commercial deals with investors or developers for purposes of developing or using the land owned by the group, and of managing the income accruing from the land with the

consent of the group. In PNG, decisions regarding the use, development and management of customary land are usually governed by local norms and customs (Larcom, 2016; Filer, 2007).

One of the main objectives of this paper is to appraise the relevance and effectiveness of PNG's local norms and customs as land governance instruments for promoting sustainable development on customary land. However, there is a complex discourse on the relationship between local norms and customs and customary land development. For example, Filer (2007) argues that a variety of agencies (e.g. land associations) engaged in the business of developing (or even conserving) the natural resources which are located on, in, or underneath the huge swathe of customary land in PNG must deal with the absence of any systematic record of the social or territorial boundaries of the 'land groups' that are regarded as the collective owners of such land. According to Filer (2007), anthropologists tend to reflect on customary land tenure in Melanesia in terms of the "triangular relationship between 'land', 'groups', and 'boundaries', or the tripartite relationship between landowning groups, land boundaries, and group boundaries". The problem with this configuration, according to Filer, is that it raises a few fundamental questions, such as: Does it make more sense to say that land belongs to groups or groups belong to land? This and similar questions border on the realm of public policy because if local and district court magistrates make sensible judgments when customary land rights are disputed, then Melanesian custom may slowly turn into a Melanesian form of common law, in the same way that ancient English custom evolved into English common law (Cooter, 1989).

In view of the above, the purpose of this paper is to undertake a comparative analysis of three types of land associations operating in Papua New Guinea, with a view to identifying their relative strengths, weaknesses and policy implications for the sustainable development and management of customary land. The paper is structured into six sections. This first Section introducing the paper is followed in Section 2 by the statement of the problem, hypotheses and contributions to knowledge. A profile of the three categories of land associations in PNG and the question of land tenure governance are then presented in Section 3. The research method is examined in Section 4, while the research findings and discussion follow in Section 5. The concluding section summarizes the findings and key policy implications of the paper.

THE NATURE OF THE PROBLEM, HYPOTHESES AND CONTRIBUTIONS TO KNOWLEDGE

The 2009 amendments to the ILG Act 1974 have brought about strict requirements for incorporation, membership, management and ownership of land in a legal sense. However, the question of whether these changes will bring the much desired outcome is yet to be answered. Most landowners are largely uneducated and illiterate and live in the rural areas that have restricted access to information (Weiner and Glaskin, 2007; Weiner, 2000), even though the adult literacy rate for PNG between 2008 and 2012 was 62.4 percent (UNICEF, https://www.unicef.org/infobycountry/papuang_statistics.html, accessed 10 April, 2017). It is suggested that the State is weak in PNG because both the government and other stakeholders are not doing enough to support the land groups through training, monitoring and financial assistance to promote ILGs' corporate sustainability and ability to meet their obligations as modern organizations (Yala, 2010; Weiner, 2000; Fingleton, 1998). This weakness has resulted in ILGs becoming vulnerable to misuse or disputes that portray them as mere entities for cash distribution (Kalinoe, 2001; Fingleton, 1998), a problem that clearly raises doubts about ILGs' continuous commitment to sustainability as legal entities in the country. Furthermore, there are no proper land use guidelines for customary land (as with alienated land) because it is governed by customary law (Larcom, 2016; Filer, 2011 and 2007; Dixon, 2007). Other challenges facing the land associations in Papua New Guinea include: weak government support (or lack thereof) and weak awareness; little or lack of equal participation by landowners; interference by non-members of land associations; confusion surrounding landowners' understanding of legal provisions about land associations; non-regulation of registered customary land; abuse of the Incorporated Land Groups by some greedy individuals, *inter alia*. These issues arise as a result of the weak land administration system in PNG, together with other weaknesses such as land grabbing and poor governance (Greenpeace Australia Pacific, 2012; Armitage, 2000, 2002). In addition to these weaknesses, Lakau (1991) argues that there are too many uncoordinated land-related Acts; furthermore, most are outdated and reflect colonial development strategies, which cannot accommodate

traditional customs (Larcom, 2016; Filer, 2007). Customary law is extremely diverse and dynamic, limiting its compatibility with government legislation and hence its effectiveness (Dixon, 2007; Lakau, 1991). On the other hand, state law is not so dynamic due to the negative impacts of bureaucracy, corruption and weak enforcement of policies (Larcom, 2016; Filer, 2007).

Lack of management capabilities by ILG managers and stakeholders, including good governance, and other challenges associated with ILGs, led to the emergence of other land groups such as Land Corporations and Land Associations in an attempt to simplify the process of benefit-sharing by landowners (Goldman, 2005; Tararia and Ogle, 2001). However, even with the formation of new landowner groups, many landowners still complain of unfair distribution of benefits and mismanagement of those groups (Goldman, 2005). In other cases, lack of awareness by landowners (especially in areas where there are no ILGs) of the strategies that could be used to choose between Land Corporations and Land Associations for the purposes of forming business partnerships with land developers (Young, 1990), is another contentious issue in PNG today.

This paper therefore seeks to assess and compare the performance of three types of customary land associations in Papua New Guinea, with a view to analysing related sustainability issues for improved economic development and management of customary land. The paper attempts to make contributions to the literature on the subject of 'customary land associations and their impact on sustainable land development' by testing two hypotheses, namely:

1. **Hypothesis H_1 – That under the existing customary land policies, processes and procedures in Papua New Guinea, Incorporated Land Groups are the most preferred category of land associations for developing customary land.**
2. **Hypothesis H_2 – That there is a positive correlation between customary ownership of land and sustainable land development.**

This paper is important because the findings and recommendations of the study will enable customary land associations, customary landowners, government, land developers and other stakeholders to undertake inclusive and sustainable development projects on customary land, particularly in countries with vast amounts of customary land. Furthermore, there are a dearth of

research findings on the complex interrelationships between customary land associations, land tenure governance and sustainable development on customary land.

LAND ASSOCIATIONS IN PAPUA NEW GUINEA AND THE CONCEPT OF 'LAND TENURE GOVERNANCE'

In this section we present a profile of three categories of land associations in PNG and then operationalize the concept of 'land tenure governance' relative to the four objectives of the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (VGGT) (FAO, 2012). 'Good governance' is regarded as the overarching subsystem of sustainable development and the *sine qua non* for the sustainability of land associations anywhere in the world (http://www.sustainablemeasures.com/Training/Indicators/Def-Br1.html, 25 January, 2017; Kocmanová, A. & Šimberová, 2014; Petrosyan, 2010; Rodriguez, Roman, Sturhahn and Terry, 2002; Elkington, 1997; Brundtland Commission, 1987).

A profile of land associations in Papua New Guinea

Incorporated Land Groups (ILGs)

The Incorporated Land Groups Act was established in 1974 during the pre-independence era with a view to bringing customary landowners together under one land association, the Incorporated Land Group, to hold and manage their land and at the same time release customary land for economic development (ILG Act 1974, Section 13(2)). Thus far, since 1974, landowners in PNG have been able to form more ILGs under the Act. The Department of Lands and Physical Planning (DLPP) is the Government department responsible for managing the ILG Act and for overseeing the incorporation of ILGs and their successful operations as corporate entities. However, it later became obvious that the ILG Act was not being properly managed by the DLPP due to flagrant abuse of the whole process by corrupt public officials (Oliver and Fingleton, 2008). Subsequent amendments to the Act, such as occurred in

2009, attempted to rectify the problems associated with land associations' incorporation as well as the management and distribution of benefits to the associations' members.

Land Associations (LAs)

The enabling Act responsible for the administration and management of Land Associations in PNG is the Associations Incorporation Act 1966. Sections 2, 6 and 7 of the Act outline the intentions, application and incorporation procedures and processes for land associations. The Land Associations are legally recognized entities registered under Section 7 of the Act. In some resource areas of the country, landowners have ventured into forming Land Associations to represent their interests in developments that are taking place on their land, such as those of the 'Foil Clan' in Kutubu, Southern Highlands Province (Weiner, 2000). As far as landownership and resource development is concerned, the Act does not spell out the criteria for membership, but membership is open to landowners and those people that are interested in taking part or becoming part of the groups.

The Land Associations operate in ways similar to ILGs, except that ILG membership is based purely on the clan and executives that are elected and not appointed, *inter alia*. Land Associations were formed because of corruption by those responsible for the management of the ILGs (Yala, 2010; Fingleton, 1998). Unlike the ILG application format, the Land Associations application form does not include a membership list, or an inventory of the Land Association's assets, or a proper sketch plan of the land parcels owned by the clan. However, it does include a list of the people in the village that are involved with various clans (though it does not mention a specific clan).

Land Corporations (LANCOs)

The enabling Act responsible for the administration and management of Land Corporations in PNG is the Business Group Incorporation Act 1974, under which landowners have been able to incorporate land corporations as legally recognized land groups. As legal landowner groups, they are called 'Land Corporations', but when the same group enters into business, the name changes to 'Land Cooperatives'. They are commercially-oriented entities focused

more on business dealings than on managing land resources, because their main aim is to 'maximize profits to meet the objectives of the incorporated group' (Goldman, 2005). Although Land Corporations are more business-oriented, their incorporation is nevertheless based on customs. Other groups that have similar customs can also be part of the incorporated group as stipulated under Section 1(f) of the 1974 Act. The groups have the power to acquire, hold, dispose of and manage land, together with other ancillary powers for settling disputes within the groups instead of resorting to courts or other forms of formal dispute resolution.

The concept of 'land tenure governance'

According to the World Resources Institute, 'Good governance should entail processes, decisions and outcomes that sustain natural resources, alleviate poverty and improve the quality-of-life' (Weber, 2015), and promote accountability and transparency for innovations in all land dealings/transactions. The bottom line is that there should be no difference between the various types of land associations being the legal entities recognized by law to hold, manage and acquire land, to receive and distribute land benefits to association members, and to negotiate for business opportunities on behalf of the landowner company and its members as a whole. Thus good governance sets the foundation for protecting the land tenure system and the rights of landowners, for exposing deficiencies and unethical conduct among the members of the ILGs, for setting clear guidelines for efficient management of land and its resources, for monitoring land dealings, and for promoting the interests of the landowners in land development projects, *inter alia*.

There should be no difference between the various types of land associations being the legal entities recognized by law to hold, manage and acquire land, to receive and distribute land benefits to association members, and to negotiate for business opportunities on behalf of the landowner company and its members as a whole

We argue that there is an interesting relationship between land tenure governance and sustainable development on customary land: our second hypothesis in this paper. In broadly defined terms, the VGGT seek to improve governance of tenure of land around the world. Essentially, the voluntary guidelines seek to improve land tenure governance for the benefit of all people, with particular emphasis on vulnerable and marginalized groups, based on the goals of food security and progressive realization of the right to adequate food, poverty eradication, sustainable livelihoods, social stability, housing security, rural development, environmental protection and sustainable social

and economic development for all (FAO, 2012). Additionally, FAO insists that all local, provincial, regional and national programmes, policies and technical assistance, geared towards improving governance of land tenure through the implementation of the VGGT, should be consistent with States' current obligations under international law, including the Universal Declaration of Human Rights and other international human rights instruments. Specifically, the following are the four main objectives of the VGGT:

1. To improve land tenure governance by providing guidance and information on internationally accepted practices for systems that deal with the rights to use, manage and control land, fisheries and forests.
2. To contribute to the improvement and development of the policy, legal and organizational frameworks regulating the range of tenure rights that exist over these resources.
3. To enhance the transparency and improve the functioning of tenure systems.
4. To strengthen the capacities and operations of implementing agencies; judicial authorities; local governments; organizations of farmers and small-scale producers, of fishers, and of forest users; pastoralists; indigenous peoples and other communities; civil society; private sector; academia; and all persons concerned with land tenure governance as well as to promote the cooperation between the actors mentioned.

In the context of this paper, the importance of the Voluntary Guidelines is that land associations in all countries with vast amounts of customary land can learn a lot from these, as they attempt to manage their assets successfully, in the long term, on behalf of customary landowners and stakeholders. According to the World Resources Institute, good land governance implies that governments and their agencies – including ILG authorities – are accountable and responsive to customary landowners, and transparent in their reporting on the use of communal assets and in their decision-making. Such an approach will help to create opportunities for participation in policy and service delivery under an enabling political climate (Weber, 2015; http://www.wri.org/blog/2015/10/open-government-partnership-achieving-sustainable-development-goals-through, 4 July 2017).

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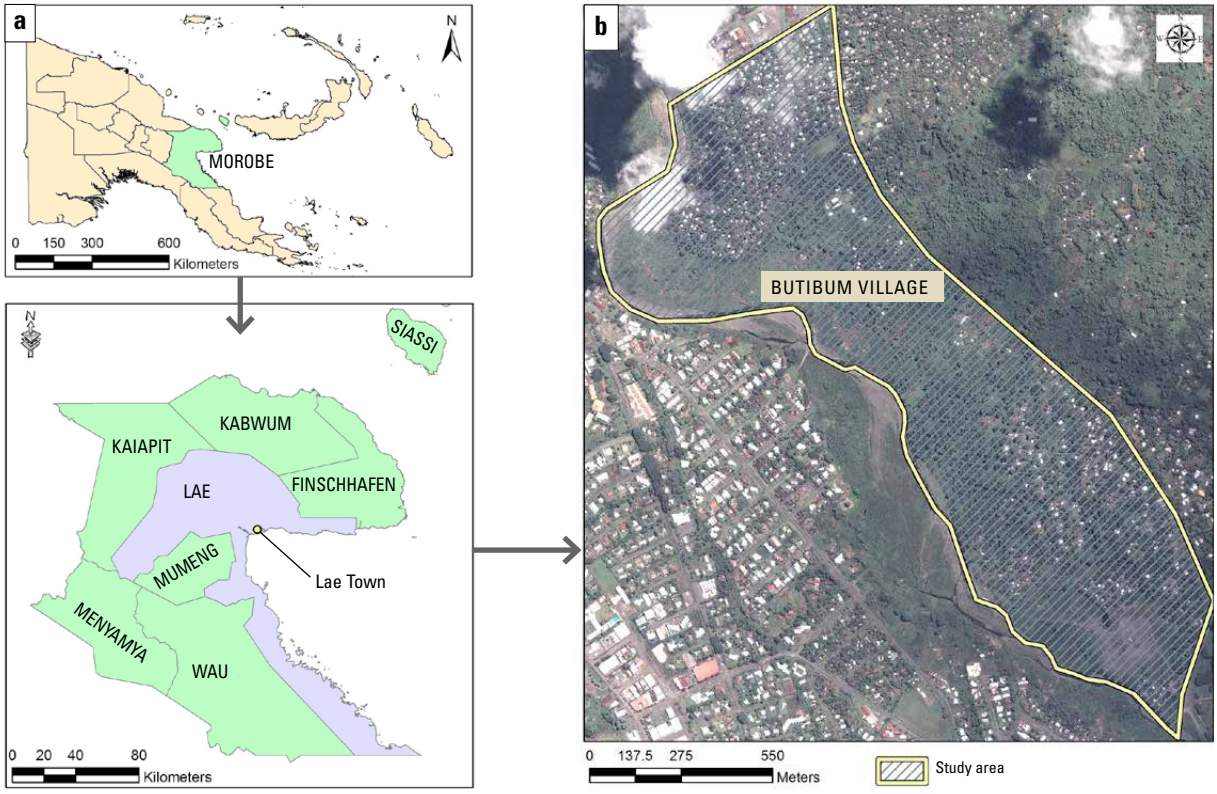
METHOD

In this Section we investigate 'land tenure governance' as practised by land associations, particularly Incorporated Land Groups, in Butibum village in the Ahi local community of Lae City, Papua New Guinea (Figure 1).

Figure 1
Map of Morobe Districts (a) and study area in yellow lines (b)



Source: Camila Yanabis and Sailesh Samanta, PNG Unitech, 2015

The Ahi local community consists of owners of customary land who are living on their own land alongside settlers: both legal settlers who had bought customary land from the original landowners, and illegal settlers. The viability of ILGs is compared with those of Land Corporations and Land Associations, which are the two land groups competing with ILGs in Papua New Guinea. A stratified random sampling approach was used to collect primary data on each of the two strata or groups of respondents (http://www.statisticshowto.com/stratified-random-sample/, 4 July 2017), namely customary landowners and stakeholders comprising government departments, developers and banks (Table 1).

Table 1
Sampling frame for questionnaire surveys, 2015

STRATIFIED RANDOM SELECTION					
Sample group	**Population**	**Target**	**Percentage**	**Returned**	**Percentage**
Landowners (households)	500 households	150	30	116	23.2
Stakeholders	20 offices	20	100	13	65.0
Total	**520**	**170**	**32.7**	**129**	**24.8**

Source: Questionnaire Survey, 2015

As can be seen in the Table, 30 percent of the 500 landowning households and all 20 stakeholders (100 percent) were interviewed in two separate questionnaire surveys. This yielded a total of 129 respondents (24.8 percent) for the two questionnaire surveys, using a sample size that was representative of the entire population of the Butibum village study area. A detailed description of the two groups of survey respondents, landowners and stakeholders, now follows.

Customary landowners

Through their ILG secretariats (Wapicguhu ILG and Wapigehu ILG in Lae, Morobe Province, PNG), a total of 116 (23.2 percent) customary landowners, including legal settler-households who own land and reside in the study area, and 13 ILG stakeholders (65 percent) were successfully interviewed during our questionnaire surveys, between January and September 2015 (Table 1).

The key questions that landowners were asked included:

1. What type of tenure system do you practise in your community?
2. Should communal ownership of customary land be encouraged or discouraged in Papua New Guinea?
3. Who exercises total ownership over the land?
4. Has the introduction of ILGs changed the way customary land is owned or used in your clan?
5. Which existing land group do you prefer most and why?
6. Are all your land rights protected under the current land administration policies and practices?

Based on PNG national statistics, households in the study area were assumed to have an average size of 5 persons per household, and one adult member in each household was successfully interviewed. Both adult male and female landowners and settlers were randomly involved in the questionnaire survey. The two urban ILGs adopted as case studies were chosen to represent the landowners as a result of their involvement with customary land development projects through partnership arrangements, also taking into consideration their years of experience since the time they were incorporated. Wapigehu ILG was selected because the ILG was incorporated 20 years ago based on the guidelines in the ILG Act 1974. Wapicguhu ILG, which was incorporated 3 years after the ILG Act was amended in 2009, was selected as the second case study so that it would be possible to include the effects, if any, of time difference on the behaviour of both ILGs.

The experiences of both ILGs with regards to landownership, land rights and equity distribution were compared and contrasted. In this way, it was possible to identify their differences relative to the 2009 amendments to the 1974 Act, given that the problems facing both ILGs are broadly similar to those of other urban ILGs in other parts of the country. Thus, Wapicguhu ILG is used in this research as a landowner group that represents those ILGs that were incorporated after the implementation of the new 2009 version of the Act. In particular, it was selected because the amendments gave more powers to women landowners in their social groups, for the purposes of owning and developing land. This arrangement is more progressive than under the original 1974 Act, where women's rights were curtailed and sometimes not even recognized. For example, women could neither vote nor be voted for.

Stakeholders

A total of 13 managers (65 percent) of various stakeholder-institutions operating in the two ILG areas were also randomly selected from a list of 20 organizations/institutions in PNG that have some particular interest in the customary land owned by the landowner households and settlers. These stakeholders usually deal with policy-making and implementation, customary land development and project financing in PNG. They included the State government departments and agencies dealing with customary land, developers (e.g. East-West Transport Ltd.) and the commercial banks dealing with project loan financing, such as the Bank of South Pacific Ltd. (BSP), Westpac Bank Ltd. and Australia-New Zealand Bank Ltd (ANZ).

The stakeholders usually play a vital role in developing customary land in PNG, but they are not the landowners and their views regarding ILGs are not seen as the views of the landowners. Each stakeholder was selected for the questionnaire survey on the basis of its past and present engagements with landowners, as well as its performance regarding customary land development in the country. A separate questionnaire survey was administered with the 13 stakeholders because it is at the management level of land associations that important decisions concerning customary land development are made. The key questions that stakeholders were asked included:

1. Which land group do you prefer most and why?
2. Should communal landownership be encouraged or discouraged in your society?
3. Are the current land administration practices doing enough to protect all customary land rights?
4. Are the current land administration practices adequate to administer and manage customary land dealings in PNG?
5. Is the legal framework strong enough to protect and promote sustainable development on customary land?
6. Will the ILGs bring about the much desired land development on customary land?

FINDINGS AND DISCUSSION

In this section the two hypotheses presented in Section 2 of the paper are tested. A reminder of the first hypothesis:

That under the existing customary land administration policies, processes and procedures in Papua New Guinea, Incorporated Land Groups are the most preferred instruments for developing customary land.

The results in Table 2 and Figure 2 indicate that ILGs are the most preferred land groups that landowners and stakeholders support for the development of customary land in PNG. According to Table 2, about 66 percent of landowners and stakeholders preferred the ILGs, while the other two types of association have a combined support lower than 35 percent. On the basis of this analysis the viability of ILGs in Papua New Guinea appears to be more sustainable than that of Land Associations and Land Corporations.

In Figure 2, where the perceptions of landowners and stakeholders were separately analysed, findings indicate that more than 80 percent of landowners and 70 percent of stakeholders selected ILGs as the most preferred land groups for customary land development. Less than 10 percent of landowners and about 25 percent of stakeholders chose Land Corporations. Only about 5 percent of the landowners and no single stakeholder chose Land Associations. Based on these findings, it is suggested that although both the landowners and land developers opted for other land groups on account of the problems associated with ILGs, preferences for the latter are still very high, comparatively speaking, as corroborated by Figure 2. Based on these findings, we submit that

Table 2
Combined preferences of landowners and stakeholders for different land associations in PNG

LAND GROUP IN PNG	FREQUENCY	PERCENT
Incorporated Land Groups	85	66
Land Corporations	26	20
Land Associations	18	14
Total	**129**	**100**

Source: Questionnaire Survey, 2015

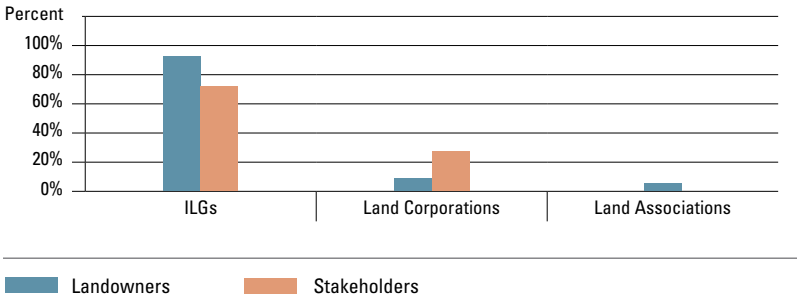


Figure 2
Perceptions of landowners and stakeholders regarding different land associations in PNG

Source: Questionnaire Survey, 2015

our first hypothesis is supported by the data, while the null hypothesis stands unsupported. These findings are consistent with the reality on the ground in Papua New Guinea, where ILGs are the most visible and popular land groups.

Now a reminder of the second hypothesis:

That there is a positive correlation between communal ownership of land and sustainable land development

In order to apply our conceptualization of 'land tenure governance' in Section 3 of this paper to analysis of the data, we employed Pearson Product Moment correlation and descriptive statistics to explore the interrelationships between land governance, communal ownership of land and sustainable land development. This was carried out as regards the perceptions of landowners and stakeholders, and the results are indicated in Tables 3–7, and in Figure 3. In so doing, more emphasis was placed on ILGs, the most preferred type of land association. It is also important to remember that 'land governance' (variable 1) implies transparency in land dealings, accountability, predictability, and institutional (legal) frameworks that are in accordance with VGGT objectives and the concept of sustainability.

It is important to remember that 'land governance' (variable 1) implies transparency in land dealings, accountability, predictability, and institutional (legal) frameworks that are in accordance with VGGT objectives and the concept of sustainability

The findings displayed in Table 3 indicate that there is a positive but weak relationship between variable 1 (land governance) and variable 2 (sustainable land development) with a Pearson correlation coefficient (r) of 0.375, which is statistically significant at the 0.01 level (2-tailed). This finding suggests

VARIABLES		VARIABLE 1 (LAND GOVERNANCE)	VARIABLE 2 (SUSTAINABLE LAND DEVELOPMENT)
Variable 1 **ILG (land governance)**	Pearson correlation coefficient (r)	1	0.375**
	Sig. T (2-tailed)		0.01
	N	129	129
Variable 2 **ILG (sustainable land development)**	Pearson correlation	0.375**	1
	Sig. T (2-tailed)	0.01	
	N	129	129

** Correlation is significant at the 0.01 level (2-tailed).

Source: Questionnaire Survey, 2015

Table 3
Relationship between land governance and sustainable land development

that sustainable land development would only be incrementally enhanced as the quality of land governance improves. Invariably, as land governance improves, ILGs will tend to benefit more from the gains of sustainable land development through higher rental payments, royalties, compensations, or other forms of benefit. This weak but positive correlation can be further strengthened as the ILGs become more efficient in their actions, policies and strategies.

Another variable that has a strong potential to impact land governance is 'communal land ownership', given that local norms and customs form the bedrock of customary land tenure in PNG. However, before exploring the strength of association between the two variables, we took into account the fact that more than half of the respondents (54 percent) indicated that PNG should encourage sustained communal ownership of customary land, while 46 percent disagreed with such a move because communal land ownership is seen as an obstacle to sustainable land development in the country (Table 4 and Figure 3). However, it is contended that 46 percent is close to a half and the indication does not explicitly state that it is a strong connection, as stakeholders who are not apt to support communal ownership are also accounted for here.

The finding suggests that sustainable land development would only be incrementally enhanced as the quality of land governance improves. Invariably, as land governance improves, ILGs will tend to benefit more from the gains of sustainable land development through higher rental payments, royalties, compensations, or other forms of benefit

Figure 3 more clearly indicates that the landowners and stakeholders have different objectives because of the division. While all the stakeholders (100 percent) have discouraged communal ownership for reasons that are not farfetched, the majority of the landowners (60 percent) supported it. In other words, both groups of respondents have conflicting perspectives.

The landowners' support for communal ownership (Figure 3) suggests that landowners are most likely to stand against the idea of customary land being fragmented into individually owned units, for two main reasons. First, communal ownership may actually enhance landowners' willingness to continue to work cooperatively with others in their clans, and continue practising their local customs under the PNG's popular 'Melanesian' (*wantok* or brotherhood) culture that keeps communities together as a family. Second, there is an economic sense that makes private land ownership more difficult to operate with scarce financial resources, particularly because the majority of the landowners are

Table 4
Opinions on communal land ownership

RESPONSES	FREQUENCY	PERCENT
Encourage communal customary land ownership	70	54
Discourage communal customary land ownership	59	46
Total	**129**	**100**

Source: Questionnaire Survey, 2015

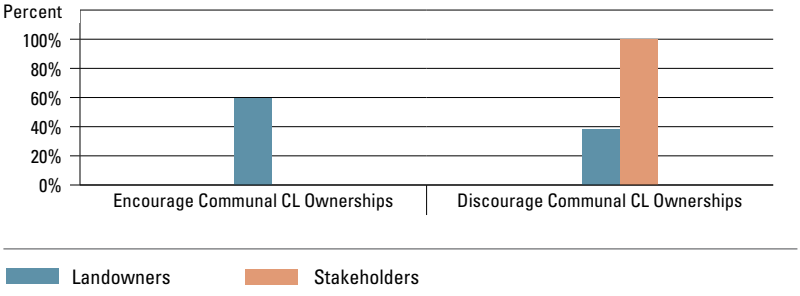


Figure 3
Opinions on communal ownership of customary land in PNG

Source: Questionnaire Survey, 2015

poor peasants who individually have no collaterals to offer for bank loans (Chand, Nao and Ondopa 2014). The fact that the majority of landowners overtly supported communal ownership seems to be a highly important finding with significant policy implications. On the other hand, stakeholders' overwhelming disapproval of communal ownership of land may suggest that communal ownership is an obstacle to sustainable land development, for at least two reasons. First, the stakeholders are apt to think that local norms and customs are obstructive to progress in the 21st century. For example, the sometimes violent tribal protests by hundreds of Native Americans in North Dakota, USA (in defence of their ancestral lands and the environment against intrusion and pollution by Federal USA authorities that are aiming to complete the installation of an oil pipeline) clearly illustrates how indigenous people can be passionately attached to their ancient ancestral lands (https://www.nytimes.com/2016/11/02/us/north-dakota-oil-pipeline-battle-whos-fighting-and-why.html?_r=0, accessed 12 February, 2017). Second, and as a result of the first reason, stakeholders are wont to believe that communal ownership tends to stifle individual owners' initiatives and hinders opportunities for personal development, as well as future opportunities for agglomeration economies in respect of economic development in the various communities.

Consequently, the correlation coefficient (r) in Table 5 indicates a negative relationship between communal ownership of customary land and sustainable land development, whose value (–0.368) is statistically significant at the 0.057 level (2-tailed). This finding also agrees with previous study findings on sociological myths (e.g. Bendor and Swistak, 2001), which suggest that some social norms and customs are often impossible to explain in terms of rational choice. Depending on the circumstance, these norms and customs may therefore be viewed as obstacles to, or supporters of, sustainable development on customary land. Perhaps the conclusion that can be reached at this point is that there may be no wrong or right defence for or against a social group's rejection of development projects (e.g. *NIMBY* protests – '*Not in my backyard*') if such rejection is deeply rooted in ancient norms and customs. Hence, we suggest that this complex issue needs to be an area for further research by anthropologists and sociologists.

VARIABLES	VARIABLE 1 COMMUNAL OWNERSHIP	VARIABLE 2 SUSTAINABLE DEVELOPMENT	PEARSON CORRELATION (R)
Variable 1 (Communal ownership)	Pearson correlation Coefficient (r)		–0.368
	Sig. T (2-tailed)		0.057
	N	129	129
Variable 2 (Sustainable land development)	Pearson correlation Coefficient (r)	–0.368	
	Sig. T (2-tailed)	0.057	
	N	129	129

** Correlation is significant at the 0.057 level (2-tailed).

Source: Questionnaire Survey, 2015

Table 5
Correlation analysis between communal ownership of customary land (variable 1) and sustainable land development (variable 2)

The relationship between sustainability and land administration policies and procedures may also be a strong indicator of the quality of land governance. In this regard, the results in Table 6 indicate that based on the current land administration policies and procedures in Papua New Guinea, the majority of landowners (75.9 percent) and stakeholders (53.8 percent) believe that ILGs are unsustainable and unviable, while only 24.1 percent of the landowners and 46.2 percent of the stakeholders indicated the opposite. This finding also seems to confirm the relevance of well-documented criticisms against the Department of Lands and Physical Planning (DLPP), the government agency responsible for registering and monitoring land associations in PNG. For example, the DLPP was recently indicted by the Honourable Minister of Lands as the most corrupt government department in PNG (http://lands.gov.pg/Services/Governance/Complaints_Desk.html, 19 January, 2017).

From another perspective, the correlation analysis between land administration policies and procedures and sustainability (Table 7) indicates a positive but weak relationship that is nevertheless significant with a Pearson correlation coefficient value of 0.379 for landowners and 0.377 for stakeholders at the 0.01 significance level (2-tailed). In other words, ILGs are not strongly positioned as corporate entities to embark on business activities

RESPONSE	LANDOWNERS		STAKEHOLDERS		MEAN
ILGs are unsustainable and unviable	88	75.9	7	53.8	48
ILGs are sustainable and viable	28	24.1	6	46.2	17
Total	**116**	100.0	**13**	**100.0**	**65**

Source: Questionnaire Survey, 2015

Table 6
Sustainability and viability of ILGs under the existing land administration policies and procedures in PNG

or to release customary land for economic development and beneficial land ownership. The weak correlation coefficients indicate that ILG's governance policies are either weak or are not properly implemented, which again translates to weak land governance.

Using deductive reasoning, it is contended that no land administration policies and procedures rooted in unpopular customary ownership of land (which is not even supported by stakeholders) will ever succeed. Therefore, based on the pertinent findings in Tables 3–7 and Figure 3, the second hypothesis – 'That there is a positive correlation between communal ownership of land and sustainable land development' – is not supported by available data. In fact, the negative correlation (–0.368) between communal ownership of land and sustainable development is striking, because it demonstrates unequivocally that communal land ownership does not promote sustainable development on customary land. This may further explain why the stakeholders overwhelmingly opposed it (Figure 3) – 100 percent of them. Furthermore, using 'communal ownership' of land as a proxy for 'land governance' by the

	PEARSON CORRELATION (R)			
Variables	**Landowners**		**Stakeholders**	
Variable 1 Existing land administration policies and procedures		0.379**		0.377**
		0.01		0.01
		116		13
Variable 2 Sustainability of ILGs in PNG	0.379**		0.377**	
	0.01		0.01	
	116		13	

** Correlation is significant at the 0.01 level (2-tailed).

Source: Questionnaire Survey, 2015

Table 7
Correlation analysis between existing land administration policies and procedures (variable 1) and sustainability of ILGs (variable 2)

ILGs in the context of this study is considered relevant, in so far as local norms and customs dictate how land associations govern customary land in PNG: their success in so doing is inextricably tied to cultural appraisal, given that resources are said to be cultural appraisals (O'Riordan, 1989).

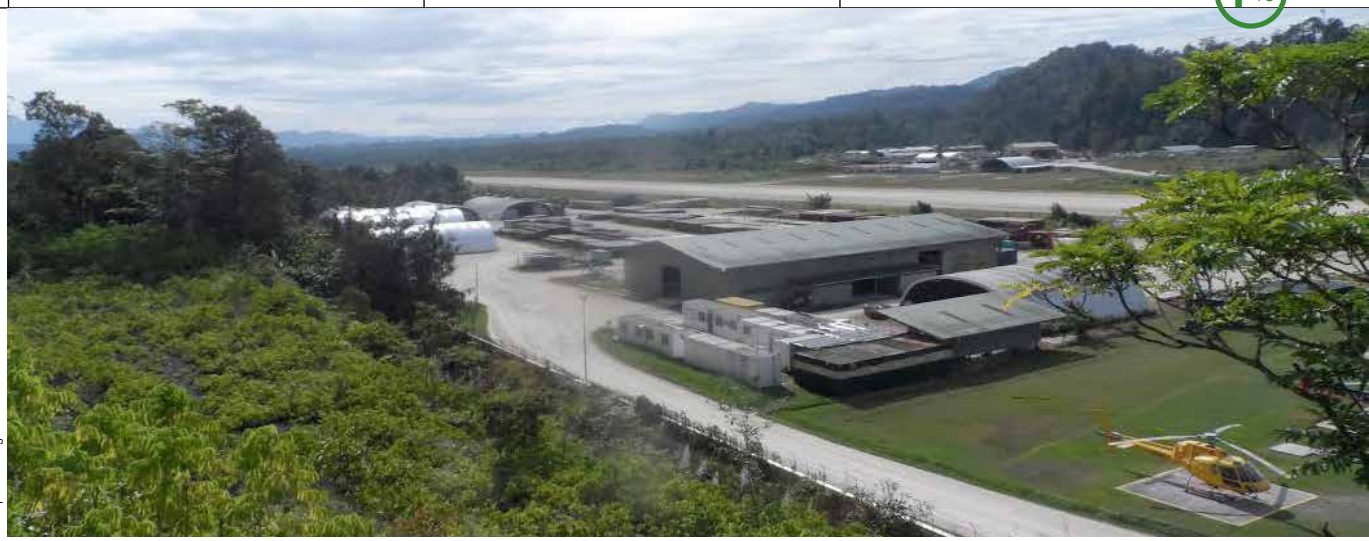
CONCLUSIONS

The purpose of this paper has been to analyse the perceptions of owners and stakeholders of customary land in Papua New Guinea, with regards to the sustainability or otherwise of the best rated group of customary land associations in the country. Three customary land associations were investigated in the paper, namely: Incorporated Land Groups, Land Corporations and Land Associations.

After carefully profiling the three types of land associations and conceptualizing 'land tenure governance' in the context of the Voluntary Guidelines objectives, two hypotheses were tested. The first hypothesis states: 'That under the existing customary land administration policies, processes and procedures in Papua New Guinea, Incorporated Land Groups are the most viable instruments for developing customary land.' This hypothesis is supported by data, while the null hypothesis is not supported. This finding is perhaps unexpected: initially it may have been assumed that the various criticisms against ILGs, leading to the emergence of new land associations, might have resulted in weakened support for these ILGs. However, the stronger support for the ILGs also indicates that 'age' may have translated to a positive in terms of 'more years of experience' for the ILGs, allowing them to leverage the fact that the other two types of land associations have less experience in land governance.

The second hypothesis states: 'That there is a positive correlation between communal ownership of land and sustainable land development.' This is not supported by available data, given the negative and weak Pearson's correlation coefficient (r) of –0.368, which is statistically significant at the 0.057 level (2-tailed).

The findings in this paper have important implications for land governance policies, not only in Papua New Guinea – where customary land tenure accounts for 97 percent – but also in some other countries where vast amounts



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of customary land abounds: for example, in Solomon Islands, customary land tenure accounts for 87 percent of all lands in the country (AusAID, 2008). In this regard, it is important to note that land rights in PNG are demarcated using natural landmarks, such as rivers, valleys and, in some cases, prominent trees in the area (Larcom, 2016; Filer, 2007), making them different from those in Fiji, Vanuatu and Samoa where customary land boundaries are now being fixed using normal survey beacons. This is why the situation in PNG is more closely related to that of Solomon Islands, although the grouping of customary land tenure associations is applicable to many Pacific islands.

Some of the main challenges facing land associations in Papua New Guinea include: (i) weak government support and awareness or lack thereof (ii) little or lack of equal participation by landowners (iii) interference by non-members of land associations (iv) confusion surrounding landowners' understanding of legal provisions about land associations (v) non-regulation of registered customary land, and (vi) abuse of the incorporated land groups by some greedy individuals, *inter alia*. These are some of the key challenges that must be given urgent attention by the Government of PNG and other stakeholders in order to release customary land for viable and sustainable land development.

The key strategies that could be adopted to mitigate the challenges facing customary land tenure in Papua New Guinea will need to feed into long-term policy formulation and implementation, as follows.

Improved land governance

The main reason why the original ILGs in PNG are being deserted by some customary landowners is that the ILGs have not been effective in implementing their land tenure governance functions. When this allegation is viewed against the 1995 guidelines of the United Nations' Commission on Sustainable Development (CSD), subject to possible adjustments made by individual countries to meet their unique sustainable development aspirations, it is incontrovertible that land associations in PNG need to review their land governance strategies for better decisions and more effective and equitable actions. To this end, the ILGs and other land groups must evaluate their performance continuously as regards its relevant 'governance indicators', such as transparency, accountability, predictability and the institutional (legal) framework. Furthermore, the ILGs and other land associations in PNG should embrace the principles of the VGGT, so that they can become more relevant and competitive locally, regionally and globally.

Periodic sustainability reporting

Producing sustainability reports to keep the government, stakeholders, landowners and society aware of the performance and achievements of land associations in PNG should become a corporate social responsibility (CSR) issue. According to Hermes (2014), some of the most commonly cited reasons justifying production of sustainability reports by public corporations include: (i) accountability/transparency to stakeholders (ii) improving public perception and brand image (iii) improving processes, culture and sustainability technology (iv) achieving competitive advantage, and (v) staying abreast of best practices and benchmarking in sustainability performance. Adapting these motivations to suit their individual circumstances will enable land associations in PNG to achieve operational excellence that supports holistic sustainability. Although such measures have no precedent in PNG, they will present an interesting challenge for the land associations, given that they are both feasible and beneficial to the long-term survival of the land groups.

Strengthening the weak land administration system

The existing weak land administration policies and procedures in PNG explain why most of the land groups are not sustainable, but this ought not to be so, as several studies have argued (e.g. Grant, Ting and Williamson, 1999). The national agency responsible for land administration is the Department of Lands and Physical Planning, but it lacks the capacity to monitor and supervise all land associations in the country effectively. Furthermore, there is currently no database for customary land in PNG, a problem resulting from the poor performance of the widely criticized Land Administration and Geographic Information System (LAGIS) (Tumare, Babarinde and Tagicakibau, 2015) used in the country. Therefore, the government should overhaul the existing LAGIS and replace it with a more versatile Land Information System (LIS).

Codification of Melanesian norms and customs

The government needs to organize a National Symposium to codify local norms and customs in PNG, particularly as regards customary land practices, to promote sustainable and competitive economic development across the 22 provinces in the country. This need is compelling given that customary land tenure accounts for 97 percent of all land in the country. As Filer (2007) and Cooter (1989) argue, Melanesian custom may slowly turn into a Melanesian form of common law (in the same way that ancient English custom evolved into English common law), for the beneficial development of customary land by which its constant rearrangement is carried out in a sustainable manner.

Finally, we suggest that the solution to the challenges facing the land associations in PNG lies in overhauling and regulating the entire gamut of customary land practices, backed by massive public participation in reaching sustainable solutions to the problems eroding the very fabric of the tenure's existence. It is hoped that if the above recommendations can be thoughtfully implemented, customary land governance in PNG will be able to compete effectively with alienated land in the overall interests of the nation.

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ADDRESSING LAND ISSUES IN THE DEMOCRATIC REPUBLIC OF THE CONGO: Applying the green negotiated territorial development approach to unlocking a long-lasting land conflict in the North Kivu

RÉSOLUTIONS DES PROBLÈMES FONCIERS EN REPUBLIQUE DEMOCRATIQUE DU CONGO: Application de l'approche de développement territorial négocié vert pour débloquer les conflits fonciers durables au Nord-Kivu

HACER FRENTE A LOS PROBLEMAS EN TORNO A LA TIERRA EN LA REPÚBLICA DEMOCRÁTICA DEL CONGO: Aplicación del enfoque de desarrollo territorial negociado verde para desbloquear un conflicto territorial de larga data en Kivu del Norte

ABSTRACT

LAND CONFLICT

NEGOTIATION

TERRITORIAL AGREEMENT

GREENTD

Lasting conflicts in the eastern part of the Democratic Republic of the Congo (DRC) are partly rooted in land issues. Conflicts between communities and concessionaires, arising from the limited access and rights over land of the population, are difficult to resolve using only a legal framework. This article describes conflict mechanisms over land and natural resources in the eastern part of the DRC, particularly in Masisi (North Kivu), and outlines the results of the implementation of a pilot case. Based on a negotiated territorial development (GreeNTD) approach, the process consisted of bringing together the different stakeholders – local communities, land concessionaires, small landowners, customary authorities,

RÉSUMÉ

CONFLIT FONCIERS

NÉGOCIATION

ACCORD TERRITORIAL

GREENTD

Les terribles conflits qui ont lieu dans la partie orientale de la République démocratique du Congo (RDC) ont en partie pour origine des problèmes fonciers. Les conflits entre les communautés et les concessionnaires, découlant de l'accès limité à la terre et des droits fonciers restreints de la population, sont difficiles à résoudre à partir du seul cadre juridique. Cet article décrit les mécanismes de conflit liés aux terres et aux ressources naturelles dans la partie orientale de la RDC, en particulier à Masisi (Nord-Kivu), et présente les résultats obtenus par un projet pilote. Sur la base d'une approche de développement territorial négocié (GreeNTD), le processus a consisté à rassembler les différentes parties

SUMARIO

CONFLICTO DE TIERRAS

NEGOCIACIÓN

ACUERDO TERRITORIAL

GREENTD

Los conflictos de larga data que se producen en la parte oriental de la República Democrática del Congo radican en parte en cuestiones relativas a la tierra. Los conflictos entre las comunidades y los concesionarios, que derivan de la limitación del acceso a la tierra y los derechos a esta de la población, resultan difíciles de resolver empleando únicamente un marco jurídico. En este artículo se describen los mecanismos de solución de conflictos en torno a la tierra y los recursos naturales en la parte oriental de la República Democrática del Congo, en particular en Masisi (Kivu del Norte), y se exponen los resultados de la aplicación de un caso experimental. Sobre la base de un enfoque de desarrollo territorial

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the government – to find solutions to competition problems regarding access to limited natural resources. The results represent a promising opportunity to facilitate land access for the community concerned, and provide a means to strengthen social cohesion.

prenantes – communautés locales, concessionnaires de terres, petits propriétaires fonciers, autorités coutumières, gouvernement – pour trouver des solutions aux problèmes de concurrence concernant l'accès aux ressources naturelles limitées. Ce projet pilote constitue une opportunité prometteuse qui facilite l'accès à la terre de la communauté concernée et fourni un moyen de renforcer la cohésion sociale.

negociado (GreeNTD, por sus siglas en inglés), el proceso consistió en reunir a las distintas partes interesadas —comunidades locales, concesionarios de tierras, pequeños propietarios de tierras, autoridades consuetudinarias, el Gobierno— para encontrar soluciones a los problemas de competencia en relación con el acceso a los limitados recursos naturales. Los resultados constituyen una oportunidad prometedora para facilitar el acceso a la tierra de las comunidades afectadas y proporcionan un medio de reforzar la cohesión social.

INTRODUCTION

In the African Great Lakes region, particularly in eastern DRC, inequality of land access is one of the most significant structural factors in long-lasting conflicts. Competition for access to natural resources is a structural issue and one of the main factors fuelling power struggles in the region (Huggins *et al.,* 2005). In North Kivu, where more than five million people live in rural areas – 73 percent of the region's population, in about 705 000 households – access to land is not guaranteed. As a consequence, insecure or inadequate access to land is one of the most significant factors in the impoverishment of rural areas, is considered the main obstacle to regional stability, and could also constitute a trigger for further regional violence (Ansoms and Hilhorst, 2014).

Land disputes in this area also have several historical causes that are inextricably linked, some broad and some more context-specific. Land scarcity and population pressure are examples, as is the competing (and often conflicting) dual regulatory system of customary land tenure and statutory land tenure. In addition, land rights in post-conflict reintegration situations are not sufficiently recognized as a concern with respect to the displaced and their host communities (Achieng *et al.,* 2014); what is more, these constitute only one of a myriad of land and property issues that arise in conflict and post-conflict regions (Leckie, 2009).

In this regard, tackling land disputes remains a crucial element in building peace, rural development and social cohesion, and must therefore be addressed with a suitably proportionate effort, but also with caution (Beck, 2012). Effective management of land conflicts in terms of prevention and mitigation requires a comprehensive approach that takes into account the complex and multifaceted nature of land, and at the same time puts people back at the core of the problem and its resolution (FAO, 2016b). A specific approach to address complex land issues, based on the principles of dialogue and negotiation, becomes crucial to promote social cohesion, shifts in gender power relations, socio-economic development and enhanced ecological security, within the framework of reconstruction, stabilization, and conflict transformation (Rupesinghe, 1995; Lederach, 2003). In this

sense, the settlement of land disputes should be accompanied by support for the strengthening of social ties and the reconstruction of the social and economic fabric (Jeong, 2005).

This article presents the results of the concrete application of a territorial approach to resolving these issues in eastern DRC, based on dialogue and negotiation, called the Green Negotiated Territorial Development approach (GreeNTD) (FAO, 2016a). It is an innovative means of addressing land issues for peoples affected by unequal access to land specifically, and to natural resources more broadly (e.g. forests, water, arable land, etc.).

The approach taken fits within the framework of resilience promoted by FAO in the DRC. It facilitates sustainable access to land for affected peoples, and contributes to the prevention and mitigation of impacts and shocks on livelihoods, thereby strengthening agricultural recovery and food security (FAO, 2013).

The Green Negotiated Territorial Development approach is an innovative means of addressing land issues for peoples affected by unequal access to land specifically, and to natural resources more broadly

BACKGROUND

Land issues in eastern DRC

Located more than 1 500 km from the capital, Kinshasa, North and South Kivu have few economic relations with western Congo. Rather, economic exchanges are oriented towards East Africa and the Indian Ocean. The region was neither static nor peaceful even before European explorers penetrated it in the nineteenth century. The historical root cause of the land problem can be found in the decree issued by King Leopold of Belgium at the beginning of the colonial period, stating that any land deemed vacant, including land under customary rules, belonged to the state, and could therefore be expropriated and given to European-Belgian settlers. Although the quantity of land that fell under the decree is difficult to estimate, no doubts exist as to its quality: it was the best farming land available.

As the number of settlers increased, so did the demand for labour. This shortage was especially severe in Masisi, where the local Hunde population was reluctant to work for European settlers and administrators. A massive immigration of over 80 000 Rwandans was therefore organized in response

(Mathieu and Tsongo, 1998). In a matter of a few decades, Hunde became a minority on their own land (Stearns, 2012; Rusamira, 2003).

In the years since the 1994 genocide in Rwanda, the political instrumentalization and debate on nationality has quickly confused the social order, given the large flow of Rwandan migrants (collectively called the Banyarwanda, and including the Hutu and Tutsi peoples) into Kivu. Previously, the social order had been a guarantee of regional stability and social cohesion. Population pressures and lack of security on land led to interethnic conflicts, e.g. between Tutsi, Hutu and Hunde (Rusamira, 2003). It is also noteworthy that in Kivu, the issue of unfair land use is also burdened by the transitional arrangement set up for land accumulation by economic elites, at the expense of the rural poor (Amanor, 2012).

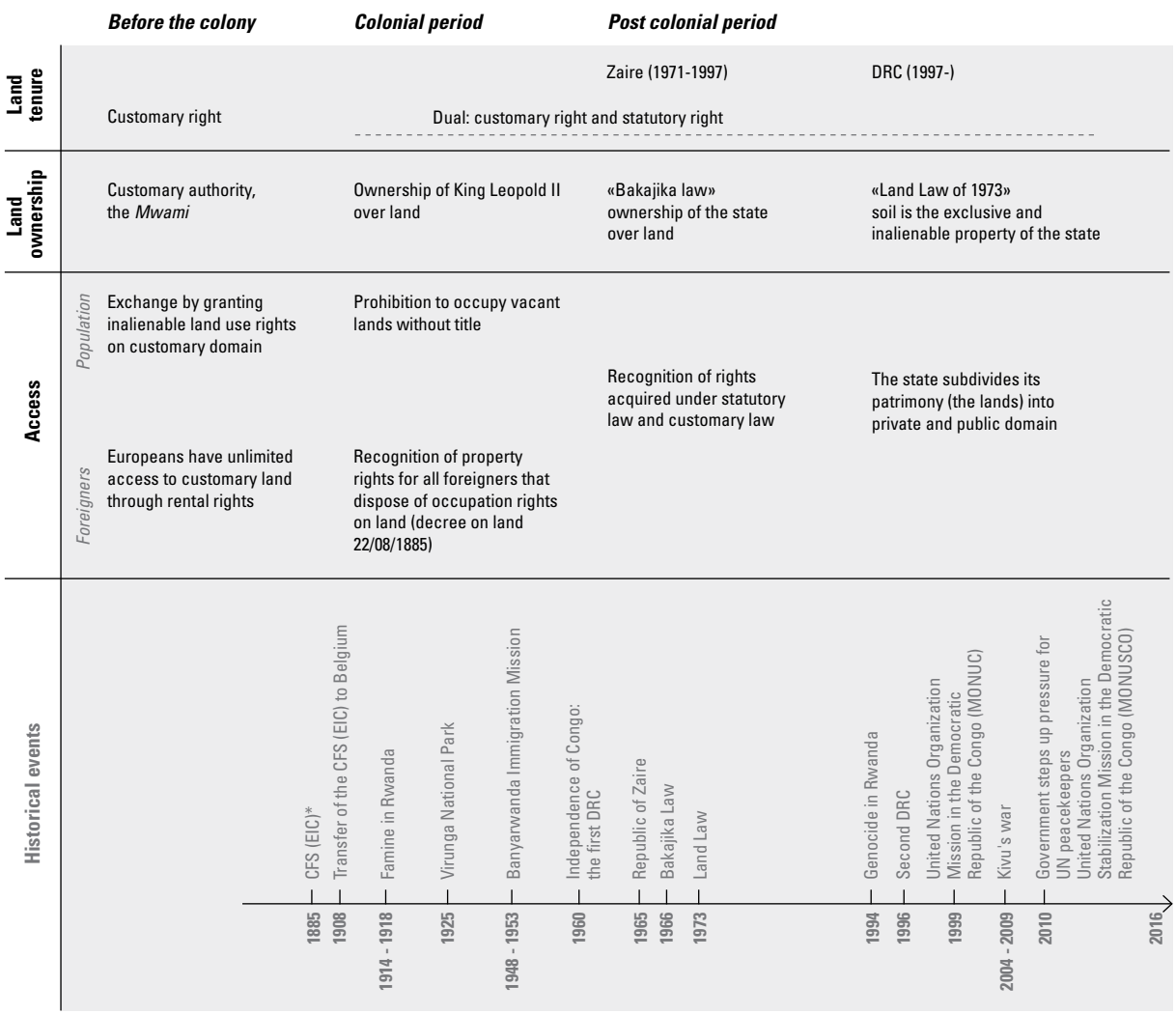
The crisis of social tenure relationships

After the DRC gained independence from Belgium in 1960, land access became even more confused and controversial. In 1966, a new land law was passed, known as the Bakajika Act[1], promulgating state ownership over all land, including those areas abandoned by former owners as well as areas deemed to be underused. A land law was then passed in 1973[2] that radicalized these reforms by rejecting customary titles and making the state the only legal provider of land certificates, via its land administration offices (Sylla and Sietchiping, 2012). For customary chiefs in Kivu towns such as Masisi and Rutshuru, who already felt buffeted by Banyarwanda immigration, this law was a direct threat. Its immediate effect was to favour the political and urban economic elites. It did not provide adequate consideration of, and hence protection for, small agricultural producers (International Alert, 2015 – see below for a graphical time line of land rights in the DRC).

1 The Bakajika Act promulgated as Ordinance-law June 7, 1966, serves to regulate the legal regime of land ownership as the Constitution of 1 August 1964 provides in Article 43, paragraph 4: *«une loi nationale réglera souverainement le régime juridique des cessions et des concessions foncières faites avant le 30 juin 1960 »*.

2 The 1973 General Property Law (Law No. 73-021), as amended, provides for state ownership of all land, subject to rights of use granted under state concessions. The law permits customary law to govern use-rights to unallocated land in rural areas (Vlassenroot and Huggins 2004) http://reliefweb.int/report/democratic-republic-congo/land-migration-and-conflict-eastern-dr-congo.

Figure 1
Time line of land legislation in DRC



*Congo Free State - CFS (État Independent du Congo, EIC in its French acronym)

Mugangu (2008) has shown schematically the crisis of social land relations in DRC since the implementation of the land law, and identifies three groups of conflicting relationships around land:

1. between state and traditional authorities
2. between traditional authorities and peasants
3. between private interests and peasants.

The land crisis is explained by the interaction between these actors, an interaction that changes depending on the characteristics of the local context, i.e. the territory and the particular path followed by each territorial entity (Mugangu, 2005).

The consequences of the land crisis

The main consequences of this crisis, according to the testimony of the various interviewees, include the following:

i. The present situation is an obstacle to the return and reintegration of internally displaced persons (IDPs). The Protocol on Protection and Assistance to Internally Displaced Persons[3] establishes a legal framework for the protection of IDPs. However, land tenure insecurity remains the major obstacle to the return of displaced persons: in the case of North Kivu, over one million people.
ii. It is a barrier to agricultural production: land disputes and lack of tenure security have contributed to the underutilization and abandonment of arable lands. In addition, fear became an obstacle to agriculture: for example, peasants sometimes simply stopped farming, in order to avoid problems with armed groups or with landowners.
iii. It is an obstacle to social cohesion and peace building: land disputes still divide communities. Today, ethnic division often reflects the involvement of military or armed groups that support their own ethnic origins.
iv. It is a human rights violation: for example, arbitrary arrests and intimidation are often mediated by powerful people. There is greater

3 https://www.lse.ac.uk/collections/law/projects/greatlakes/4.%20Humanitarian%20and%20Social%20Issues/4c.%20Protocols/Final%20protocol.PropertyRights%20-En%20r.pdf

insecurity and an increase in the number of cases of sexual violence, especially during displacements.

v. It contributes to environmental degradation: land conflicts stir up a vicious cycle of human vulnerability coupled with environmental degradation. Exposure to conflict-ridden environments not only inhibits the natural potential for development of individuals, but also means that it takes longer for environments to recover from human damage. These two elements are interconnected in a repeating cycle (UNEP, 2011).

The location of the case study

The pilot case study is in the village of Luhonga, Masisi, North Kivu, and includes the nearby locations of the Kamuronza *groupement*.[4] The village currently belongs to Luhonga concession, located in Masisi, 7 kilometres from Sake (1°34'26.79"S, 29°2'28.78"E – Figure 2).

North Kivu is a region of abundant natural resources. It benefits from volcanic fertile soils and a good climate for human habitation, classified as Aw in the Köppen–Geiger system (a tropical wet and dry climate) with an average annual temperature of 19.4 °C and annual rainfall of 1 405 mm. The climate is favourable to agriculture and the keeping of livestock. The mountain range that crosses the area includes an extensive hydrographic network. Mineral resources are present, such as gold, coltan, diamond and tungsten (also called wolfram). The economic activities of the territory are therefore mainly based on agriculture, livestock and local trade. Subsistence farming dominates the area, with food crops principally comprising corn, millet, beans, peanut and potatoes. Most commercial crops such as coffee, cocoa, rubber, tea, palm oil and sugar cane are grown in plantations, with the production of tobacco and cotton largely in the hands of private farmers.

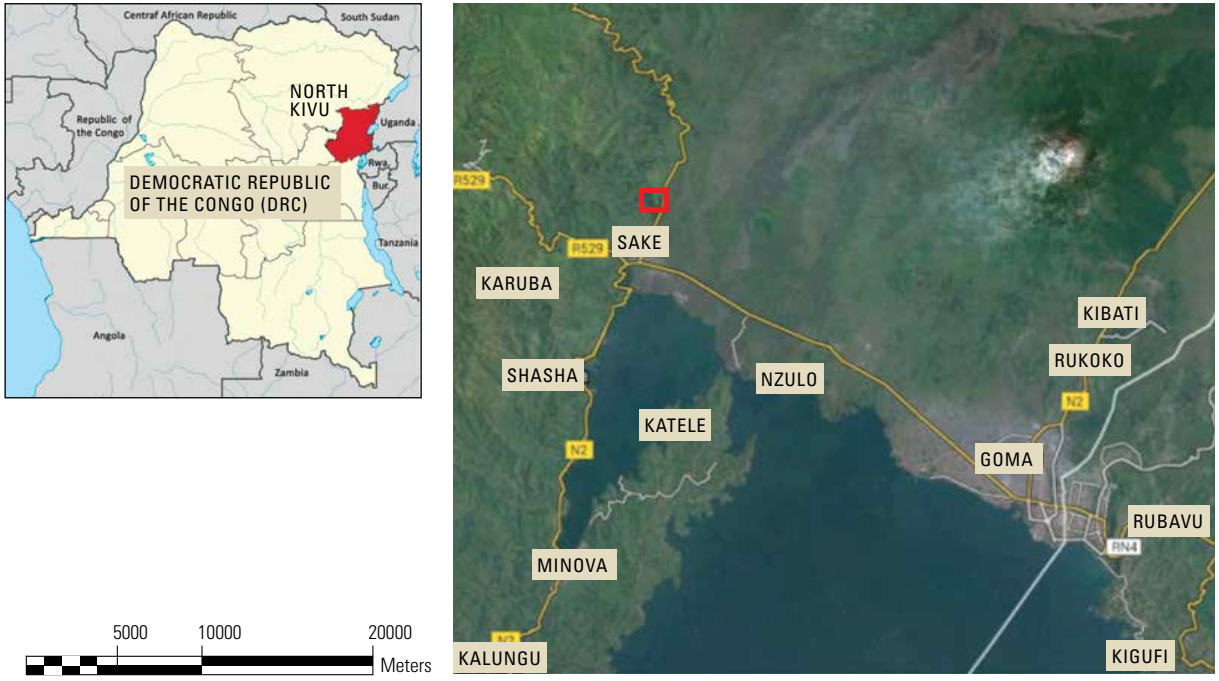
Table 1 shows a historical reconstruction of the main events that explain the current situation affecting land access for the population of Luhonga.

4 A territory is divided into collectivities (*collectivités*), groupements and villages. It is the government's most decentralized entity, as its subsidiary levels are headed by traditional leaders who have mainly administrative functions (Kostner, 1999).

Years after the return of the population to their land, 578 households – of which 242 were female-headed with an estimated total of 4 096 people – remain confined in a limited area of 24 ha distributed within two blocks of the concession (A and B), so each family has access to just 0.04 ha of arable land.

The challenge, therefore, is to succeed in securing access to land for the population of Luhonga beyond the 24 ha.

Figure 2
Location of the Luhonga area (red square – right) in the Masisi territory of North Kivu, DRC (red area – left).



Source: © 2016 Landsat/Copernicus (left), Map data © 2016 Google (right)

COLONIAL PERIOD	**1**	During the colonial period Luhonga was a large coffee plantation, owned by EGK (General Kivu companies), and was partly occupied by the families' workers. The area extents 389 ha, divided into 4 blocks (A: 206.6 ha, B: 115.5 ha, C: 34.4 ha, D: 40 ha)
POST COLONIAL PERIOD	**2**	With the nationalization of land (Bakajika Law of 1966; Law No 73-021 of 20 July 1973), this concession was acquired by a concessionaire who only exploited block A. The plantation workers, fleeing food insecurity, were displaced along the road, and began to occupy block B.
	3	Between 1993 and 2006, the population left Luhonga because of the various armed conflicts; they then returned to settle without problems in the B block.
	4	In 2006 Luhonga population is displaced to the refugee camps in Mugunga and Goma.
	5	In the return phase, people cannot settle in block B because the new owners hold land titles.

Table 1
Historical events concerning land access in Luhonga

THE GREEN NEGOTIATED TERRITORIAL DEVELOPMENT APPROACH (GREENTD)

For the last several years, FAO has been promoting territorial development approaches based on the principles of dialogue, negotiation and concerted action. They involve stakeholders concerned with land access and management issues, such as local communities, concessionaires, local authorities, landowners, and various administrations of the state and other institutions, with special attention given to gender concerns. The approaches aim to unlock long-lasting conflicts, whose origins are found in shrinking natural resources, in order to find a sustainable solution to the issue of land use.[5]

The challenge is to create a basis for dialogue and ensuing negotiation, encouraging stakeholders to explore the multiple options available so that

5 The GreeNTD (FAO, 2016a) approach constitutes a further development of previous approaches, i.e. Participatory and Negotiated Territorial Development (PNTD) (FAO, 2005) and Improving Gender Equality in Territorial Issues (IGETI) (FAO, 2012).

they can agree on one that might be acceptable to all. This iterative process should facilitate the identification of the root causes of the conflict that need to be addressed, in order to prevent, eliminate or mitigate the effects. Four main areas are considered critical: an integrated or territorial dimension, a decentralized dimension, a negotiated dimension and an ecological dimension.

Four main areas are considered critical: an integrated or territorial dimension, a decentralized dimension, a negotiated dimension and an ecological dimension

Integrated or territorial dimension: Land interventions in eastern DRC tend to limit the geographic area based on the immediate needs of rural populations (i.e. mainly arable land at village level) representing a limitation on access to land and other natural resources (principally water and forests) necessary for sustainable development. The attention on territoriality is thus a challenge that must be addressed, as it offers the opportunity to understand the dynamics and fluxes inside the territory and between territories, and promote dialogue between different actors, a necessary passage to launch a long-term process with all the stakeholders. The aim will be to enable the vision of the people to materialize, especially as far as women are concerned. Women often operate with an insightful understanding of the territory and its relations (Kermoal and Altamirano-Jiménez, 2016).

Decentralized dimension: Weak or imperfect decentralization of the state, with a limited attribution of land administration, creates barriers to the resolution of land disputes. In turn, the state's lack of credibility restricts the enforcement of laws. At local level, the decentralized dimension should be understood within the historical context involving local communities, private institutions, other organizations, etc. It can be seen as a constantly changing process, feeding on the willingness of the stakeholders and public institutions to participate actively in the management of the territory (Bonnal *et al.,* 2013).

Negotiated dimension: The diversity of stakeholders' views and interests in a territory (customary authority, peasant farmers, associations, local government authorities, the diverse private sector, etc.) must be taken into account and analysed through the historical and current dynamics between them. Stakeholders have different values, yet there is an interdependence between them that generates conflicts of interest and abuse of power or influence, disadvantaging local populations. The importance of not focusing only on the bargaining power of the different stakeholders, but on the margins of flexibility they have, is noteworthy. That is why the promotion of a

negotiated approach rather than simple participation – with the implicit risks of manipulation that are often observed in those processes – is so important.

Finally, we should not forget that these territories form a complex socio-ecological system (SES), i.e. the *spatial/ecological dimension* of the social system interactions that is related to a set of ecological conditions. In fact, the sustainability of the local territorial systems depends on this set of relations. This is why it is so important to give special attention to the ecological dimension.

The phases of the work

0. The exploratory phase: The first phase is focused on understanding why such intervention might be needed and appropriate in the eyes of the concerned stakeholders. This initial contact with different groups of stakeholders is critical in order to start building confidence with them.

1. Views phase: To develop a participatory diagnosis sensitive to conflicts, and explore innovative strategies of access to natural resources for the population, taking into account all stakeholders with their peculiarities and their territory. This phase has been carried out within the framework of a joint project involving FAO, the United Nations Human Settlements Programme (UN-Habitat) and the United Nations Development Programme (UNDP).[6]

2. Horizon phase: The objective here is to prepare coherent and feasible scenarios to support an open discussion among different stakeholders and institutions (governmental and non-governmental).

3. Negotiation phase: The aim here is to reach an agreement on the socially best legitimized solution(s) and concrete initial elements to boost access and use of natural resources.

4. Implementation phase: The decisive aim is to contribute to concretizing the resolutions agreed through dialogue and negotiation among all parties, for a sustainable and equitable access to land and natural resources.

6 Integrated Land Security Programme for Reintegration and Community Recovery in Eastern DRC. Partners: UN-Habitat, UNDP and FAO.

The exploratory phase was conducted in 2013 including a series of semi-structured interviews with key stakeholders from United nations agencies: UN-Habitat, UNDP, the United Nations International Children's Fund (UNICEF), the Office of the United Nations High Commissioner for Refugees (UNHCR), the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), the World Food Programme (WFP). It also involved other international organizations such as the International Union for the Conservation of Nature (IUCN), international NGOs such as International Alert, the Norwegian Refugee Council (NRC), Search for Common Ground (SFCG), Cooperazione Internationale (COOPI), national NGOs such as the Pole Institute, Commission Justice et Paix (CJP), the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD Programme), the Central African Regional Program for the Environment (CARPE), and donors such as the United States Agency for International Development (USAID), local authorities, and key informants in the community, involving both men and women.

Phases 1–3 were performed in 2014 and involved the organization of three forums, covering several days each, with the objective of promoting a structured dialogue and negotiation with concerned stakeholders: Luhonga inhabitants; concessionaires and private landowners; customary authorities; representatives of provincial ministries; representatives of the ministries of justice, environment, agriculture, and land tenure affairs; territorial and customary administrations; and the Capacity-building of the Stabilization and Reconstruction Plan in Eastern DRC (STAREC).[7]

The first forum aimed at creating a space for starting a dialogue between the different stakeholders to carry out a participatory, conflict-sensitive territorial diagnosis. During the forum, participants discussed the causes of conflicts and enriched the characterization and understanding of the territory.

All activities were carried out using appropriate methodologies, as shown in Table 2.

7 STAREC was primarily designed for areas affected by armed conflict, especially in eastern DRC. It was launched by the DRC government with the support of the United Nations system and technical partners for development. Its main goal is to restore state authority in the east, the region that is most fragile and most exposed to conflicts.

Table 2
Methodology and objectives attained for the various activities in the first forum (views phase)

ACTIVITY / SUBJECT / ISSUE	GOAL	METHODOLOGY
Setting the agenda	Set up the agenda for developing the GreeNTD process	Plenary discussion
Identification and discussion of the main causes of the problem(s) involved in accessing land and natural resources	Have a coherent and realistic vision of the problems at stake and a basis for concrete proposals	Conflict time line
Gather evidence on local perceptions of the location and use of land and other resources	To understand the system and its boundaries	Resource map
Characterization of the involved stakeholders, in different positions of power and with different levels of access to information, and engaging them in the process	Identify power imbalances among stakeholders	Focus group discussion (FGD) by the group of stakeholders*
Investigate the driving forces influencing the territory and the current situation affecting local livelihoods	To understand the territory and its past and present dynamics	FGD
Analyse the rational and equitable use of natural resources: – Who has access to land and natural resources (How many hectares?) – What land is currently exploited without conflict (Which land? How many hectares?) – What land is not used (How many hectares? / Why?) – What is the current use of land and resources (delimitation of uses)	To elucidate the peoples' natural resources needs	FGD

* Stakeholders included: concessionaires, the wider population, smallholders, women (a separate group composed only of women was organized so that their voices could be heard, and to capture different views more comprehensively)

The second forum aimed at identifying and validating concrete proposals for territorial development (plausible scenarios), by opening up for discussion innovative opportunities that would lead towards the development of a consensus.

All planned activities had a particular objective and an appropriate methodology, as shown in Table 3.

The third forum aimed at structuring a planning strategy from the selected scenario, i.e. to move from an abstract vision (scenario) of the territory to a plausible vision, through specific actions. Focus groups were used to discuss ways that would contribute to a lasting solution to the problem of access to land, and to underline key elements for the development of a Socio-Ecological Territorial Agreement (SETA).

Focus groups were used to discuss ways that would contribute to a lasting solution to the problem of access to land, and to underline key elements for the development of a Socio-Ecological Territorial Agreement (SETA)

Table 3
Objective attained and methods for the various activities in the second forum (horizon phase)

ACTIVITY / SUBJECT / ISSUE	GOAL	METHODOLOGY
Scenario development	Outline coherent and feasible proposals for territorial development	Plenary discussion: Participants discuss, in groups*, desirable futures that reflect their particular interests, underlining driving forces and potential risks
	Discuss the different visions of the territory's future	Plenary discussion
	Find common ground on the territory's future	Plenary discussion
	Outline features that make the scenario effective	Participants discuss the scenario in groups by looking at the system as a whole, i.e. the interdependence between the social and ecological domains*

* Four dimensions were analysed: social, economic, environmental and political

RESULTS AND DISCUSSION

Underlying factors of land disputes

Participants in the first forum revealed the existence of three fields of conflicting relationships: 1) between the state (land administration) and local authorities; 2) between customary authorities and peasants and 3) between concessionaires and peasants (Figure 3).

Access to land and natural resources is managed through an essentially precarious land regime. On the one hand a verbal *métayage* (sharecropping or usually rent) is generally too expensive (~$150/ha) and does not guarantee access for people in the community, discouraging them from making long-term sustainable investments. One the other hand, the act of cession (*acte de réconnaissance coutumière*), 'has no recognized legal value' and consequently does not secure the land user. Moreover, the land user often receives an act

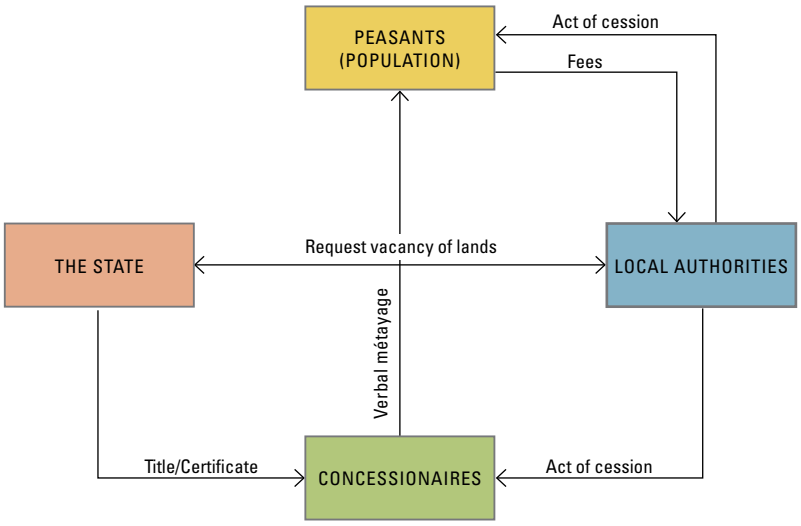


Figure 3
Conflicting relations around the issue of land, as underlined by the participants

Source: authors

of cession or a verbal *métayage* only valid during the growing season, and in most cases, some plots of land are assigned to several people simultaneously. In this context, women are the most disadvantaged, therefore both statutory and customary law discriminate against women[8], denying them access, control and security of land (UN-Habitat, 2005).[9]

Facing the challenge of an unfair land system, and aiming to facilitate secure access to land by the community and the recovery of agriculture – the main objective of the Integrated Land Security Programme, quoted above – participants in the first forum agreed that reallocation of land that recognizes its potential use is necessary, to improve the long-term productivity of the land and, increasingly, to provide new opportunities for local farmers.

Indeed, from the analysis of land uses, in the Luhonga area and surroundings, extensive rangeland (2 ha per head) and abandoned lands (e.g. wetlands and shallows) occupy 74 percent, agriculture occupies 28 percent, and afforestation occupies 4 percent. Hence, the existence of large extensions of abandoned or underutilized lands makes it fairly important to carry out some kind of zoning. This conclusion affects mainly concessionaires that have the responsibility to develop management plans and meet other management obligations; therefore, most of the laws concerned impose certain management conditions on concession holders[10]. In this regard, large extensions now occupied by extensive cattle and abandoned areas would be assessed, asserting the need for more efficient and sustainable land use allocation and innovation in management strategies.

8 Women are the primary workers of agricultural land in the eastern DRC; more than 70 percent of women work the land, producing 75 percent of the food in rural areas. (UN-CEDAW, 2011).

9 http://unhabitat.org/books/improving-womens-access-to-land-in-eastern-drc-challenges-and-emerging-opportunities/.

10 For example, most laws request a management plan (e.g. Republic of Cameroon, Article 29; Democratic Republic of the Congo, Article 74; Republic of the Congo, Article 55) and impose conditions such as the negotiation of a *Cahier des Charges* with the government, which can include certain social responsibilities of the companies concerned.

Seeking consensus on territorial development

During the second forum, participants continued their fruitful discussions around feasible scenarios/strategies for Kamuronza's territorial development. On the first day, participants identified and discussed possible development scenarios in separate groups (women, communities and landowners). Private landowners and concessionaires put forward their views on an agribusiness development scenario (namely, agribusiness cooperatives), and men from the communities focused on the modernization of agriculture and animal breeding (namely, sustainable intensive farming). A group composed only of women proposed a scenario based on integrated development (namely, participatory and integrated development for resource conservation). Participants suggested not limiting the discussion to a 'business as usual' scenario, which highlighted their wish to transform their situation, "Otherwise we would not be here" (a woman's testimony).

Then, a plenary session involved an open discussion on territorial development opportunities based on the developed scenarios, taking into account the different views and/or concerns around the territorial system in terms of opportunities and different levels of governance. The idea here was to find realistic solutions and a broad consensus, given that the scenarios represented the participants' vision of the territory.

On the second day, before the start of the negotiation phase, and in order to strengthen the legitimacy of the process, an exploratory session was carried out to understand stakeholders' willingness to continue to be involved in the process. For the population, this represented a real opportunity to facilitate access to land that would otherwise be inaccessible. For elites, concessionaires and private landowners, it was an opportunity for economic recovery and the strengthening of security, i.e. to prevent violent conflicts in the near future. For different Provincial ministries and other institutional representatives, the process was seen as an opportunity to change the paradigm of addressing land issues by strengthening dialogue between stakeholders and seeking long-term solutions. They considered the process to be 'original', and useful in supporting the stabilization of the region through the creation of a democratic dialogue.

Various proposals were analysed and discussed in order to agree and validate a single strategy of territorial development, where all stakeholders can receive their benefits. The scenario of consensus resulted from the harmonization of three original proposals, based on different components that were well accepted by all participants. The scenario was initially called 'Integrated Participatory Development for a negotiated use of natural resources'. However, the term 'negotiated' generated disagreement between different stakeholders. For instance, some participants considered that negotiating access to natural resources is unavoidable because the land and natural resources are not available. So, for them, the word 'negotiated' should certainly appear in the scenario definition. Meanwhile, other participants opined that 'negotiate', as a transitive verb, is designed to combine with the term 'participatory' so it reflects that the process is implemented via a negotiation table (a forum) between all the involved actors on land issues. Therefore, the term 'negotiated' should not appear within the scenario definition. Finally, after a stimulating discussion, the term was replaced by 'rational', and the scenario was called, 'Integrated Participatory Development for a Rational Use of Natural Resources'.

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Discussions about this single strategy (the desired scenario) were carried out by examining the system as a whole, i.e. the interdependence between the human domain and the ecological domain (the social–ecological system). Four dimensions were analysed and the corresponding outcomes were explored: social, economic, ecological and political–institutional. The scenario was based on the requirement of the coexistence of all stakeholders with differentiated needs and interests with respect for nature. Agribusiness cooperatives, sustainable intensive farming, and subsistence agriculture must all find their space in the territory and a way to develop their activities harmoniously, as shown in Table 4.

Table 4
Overview of the scenario

SOCIAL DIMENSION	Improvement of food security: → Agroforestry farms and the production of large quantities of food such as tubers (mainly cassava) allow an improvement in the nutritional status of populations, on account of more abundant and diversified agricultural production
	Strengthen social cohesion: → Dialogue facilitates access and security on the one hand, and the sustainable use of natural resources on the other; these assets contribute to stabilization (e.g. a peace dividend: living together without conflict)
	Provision of access to basic services and assets
	Facilitate community work (social networking)
	Strengthen the participation of women and youth
	Reduction of high rural–urban migration rates and the enlistment of the youngest to armed groups
ECONOMIC	Establishment of agro-industrial cooperatives: → Intercropping of coffee plantations with commercial or subsistence crops
	Creating associations or agricultural cooperatives: → Marginal lands (marshes and shallows) will be used by the community and organized into cooperatives or farmers' association
	Product diversification and improved quality: → Promoting and diversifying agricultural exports
	Diversification of work: → Crafts and other sectors
ECOLOGICAL	Long-term reforestation: → Limit pressure on Virunga National Park → Protection against soil erosion → Plantation of agroforestry species → Valuation of potential honey-producing agroforest species (e.g. Acacia); support populations of bees and other pollinators
	Maintenance of soil fertility and prevention of soil erosion: → Use of biological control and green manure
	Planting trees along roads and villages: → Ornamental and fruit trees → Home gardens, medicinal plants
POLITICAL-INSTITUTIONAL	Support of the state to facilitate access to, and rational use of, natural resources
	Restoration of state authority: → Reactivation of specialized services of the state (SENASEM – the National Seed Service of DRC; SNV – Netherlands Development Organization; SENAFIC – Service of Fertilizers and Related Inputs of the DRC) → Ministries of Environment and Land Affairs
	Regulation of taxes
	Strengthening the framework for dialogue between the population and the authorities at all levels, and improve collaboration
	Surrender rights to traditional leaders (customary fee)
	Improve security

The issue here was to understand how to facilitate land access if land is not available to people. The following question was posed by the participants: *What issue needs to be addressed first, land access or land use planning?* The response was immediate: in the Masisi region, where customary land is no longer available or accessible, land use (or land resources) planning[11] is inevitable, and is a unique way to promote a better distribution of space, facilitating access to natural resources as a basis for building resilience, reducing vulnerability and improving livelihoods (FAO, 2013). To succeed in this, participants recognized the need for a quite different pattern of land use, where land allocation is designed to follow the logic of a 'win–win' scenario, i.e. agreements between stakeholders – individuals, the community, traditional leaders, private concessionaires, the state – are sought and reached in such a way that everyone benefits.

Four opportunities for a secure, sustainable and environmentally-friendly access to land were developed by participants within the scenario, and as a result of bilateral discussions with each of the stakeholders and institutions – the population, the concessionaires, IUCN and international NGOs such as the World Wildlife Fund (WWF). These opportunities were:

1. to transform extensive unproductive pasturelands into coffee plantations in association with crops (an agroforestry system) accessible to community people;
2. to recover marshes and shallows to provide arable land for the population;
3. to establish buffer zones to protect Virunga National Park; and
4. to develop non-farm income-generating activities.

Among the four proposed options, participants chose the first two, with the creation of buffer zones as a third possibility to explore. Regarding income-generating activities, participants acknowledged that there would be a future opportunity to explore these once the problem of access to land

11 Land-use (or Land Resources) Planning is a systematic and iterative procedure carried out to create an enabling environment for sustainable development of land resources that meets people's needs and demands. It assesses the physical, socioeconomic, institutional and legal potentials and constraints with respect to an optimal and sustainable use of land resources, and empowers people to make decisions about how to allocate those resources (*Source:* http://www.fao.org/nr/land/land-policy-and-planning/en/).

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for the population was resolved. Discussions on the first two options helped define the immediate effect on the ecological integrity of the region and ecosystems in general, as well as the positive impact on local livelihoods, and the benefits for the big landowners.

The Socio-Ecological Territorial Agreement (SETA)

During the third forum, all stakeholders discussed the foundations of such an agreement, based on the idea of a win–win scenario and the opportunities identified. Stakeholders agreed that both options were the most appropriate way to 1) facilitate access to land, the main constraint for securing local livelihoods; 2) promote agricultural recovery, an essential prerequisite for the economic growth of the region; and 3) develop the agreement's contribution to regional stabilization.

Table 5 shows the description of the elements discussed for the establishment of the Territorial Social Pact signed by all participants.

Table 5

Main elements discussed aiming to achieve a Socio-Ecological Territorial Agreement (SETA): a solemn agreement between concessionaires and the population of Luhonga

ELEMENTS	DEALERS AND LANDOWNERS	POPULATION
Duties	→ Make available a portion of land that can be cultivated for the benefit of the population → Contain the wandering of animals and offer compensation measures → Undertake zoning → Qualify land through agroforestry → Rewarding farmers' labour in the coffee harvest	→ Land preparation → Crop management → Harvest coffee for sale and prevent the destruction of intercropping → Apply soil conservations practices (e.g. crop rotation) → Prohibiting subleasing of land → Avoid cultures that damage the coffee plantation
Rights	→ 100% of the coffee harvest	→ 100% of the crop harvest
Cooperation clauses	→ Sign the contract or memorandum of understanding between the dealers and local people. Factors to consider include: i. The time of land cession ii. The area of land iii. The payment system → No discrimination → Conflict resolution around a table (prevention and resolution mechanism)	
Cession of land	→ Roughly 1 hectare, depending on capacity	
Work conditions	→ To provide agricultural tools → Remuneration fees/calculation basis, according to market developments	
Assets	→ Harmonization of cooperation and cohabitation → Willingness of facilitators	
Risks to be avoided	→ Dislodgement without justification → Straying cows and other livestock → Land appropriation	
The termination clauses	→ Breach of contract terms	
Strengthening women's rights	→ Involve women in the entire process	

Finally, participants discussed the suitability of the creation of a structure/commission to monitor the implementation of the Socio-Ecological Territorial Agreement (SETA). All participants recognized the importance of this (informal) institutional mechanism to enforce the SETA and to enhance the sustainability of commitments between stakeholders, thereby maintaining social cohesion. This would take the form of a joint commission with a profile, composition and mandate, with power and legitimacy, and with its functions well defined. The initial proposal resulting from discussions in separate groups evidenced the different views taken by women (who adopted an advisory and egalitarian structure) and men (who adopted a vertical and formal structure).

In concluding, participants from the same groups discussed and developed the roadmap that would follow the activities and the timetable. They also decided would be responsible for the different activities, and targeted the accompanying organizations, e.g. FAO, UN-Habitat and UNDP. The roadmap represents a very valuable guide for the enforcement of the SETA, a bottom-up process in which the main stakeholders (the population, private landowners and concessionaires) and agencies must play their role as facilitators of the process.

At the end of the forum, all participants signed the agreement, including representatives of involved communities, private owners, the eight concessionaires, the main owners of the lands surrounding Luhonga, and representatives of the different ministries.

The roadmap represents a very valuable guide for the enforcement of the SETA, a bottom-up process in which the main stakeholders (the population, private landowners and concessionaires) and agencies must play their role as facilitators of the process

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Figure 4
Signing the Social Territorial Pact: state authorities (left) and representatives of Luhonga (right)

CONCLUSIONS

The proposed GreeNTD approach explores the interdependence between the human and the ecological domains (Walker and Salt, 2006) and meets the goal of enhancing the resilience of populations, by developing strategies to manage future shocks and crises. It aims at facilitating access to land, improving food security and sovereignty, and promoting sound management of natural resources. In addition, it contributes to the provision of access to basic services, it helps to strengthen social protection through the creation of social ties between communities and concessionaires, and it supports the empowerment of women and youth.

The approach taken in Luhonga can be considered a success, highlighting how a concerted negotiation process has been shown to be an opportunity to boost social cohesion in North Kivu, as well as enabling agricultural recovery, a prelude to economic growth in the region, and therefore a contribution towards regional stabilization.

This pilot case exemplifies a promising set of practices that could be implemented in the Masisi region, where the same dynamics of violent conflict are present: weak presence of the state and high population density in an area with large areas occupied by concessions. It fits into the STAREC vision, whose pillars are oriented towards solutions formulated locally by the communities, on the basis of democratic dialogue.[12]

The proposed GreeNTD approach explores the interdependence between the human and the ecological domains and meets the goal of enhancing the resilience of populations, by developing strategies to manage future shocks and crises

12 International Security and Stabilization Support Strategy (ISSSS) for the DRC (2013–2017). http://www.unpbf.org/wp-content/uploads/ISSSS-2013-2017-Strategic-Framework-FINAL_EN.pdf

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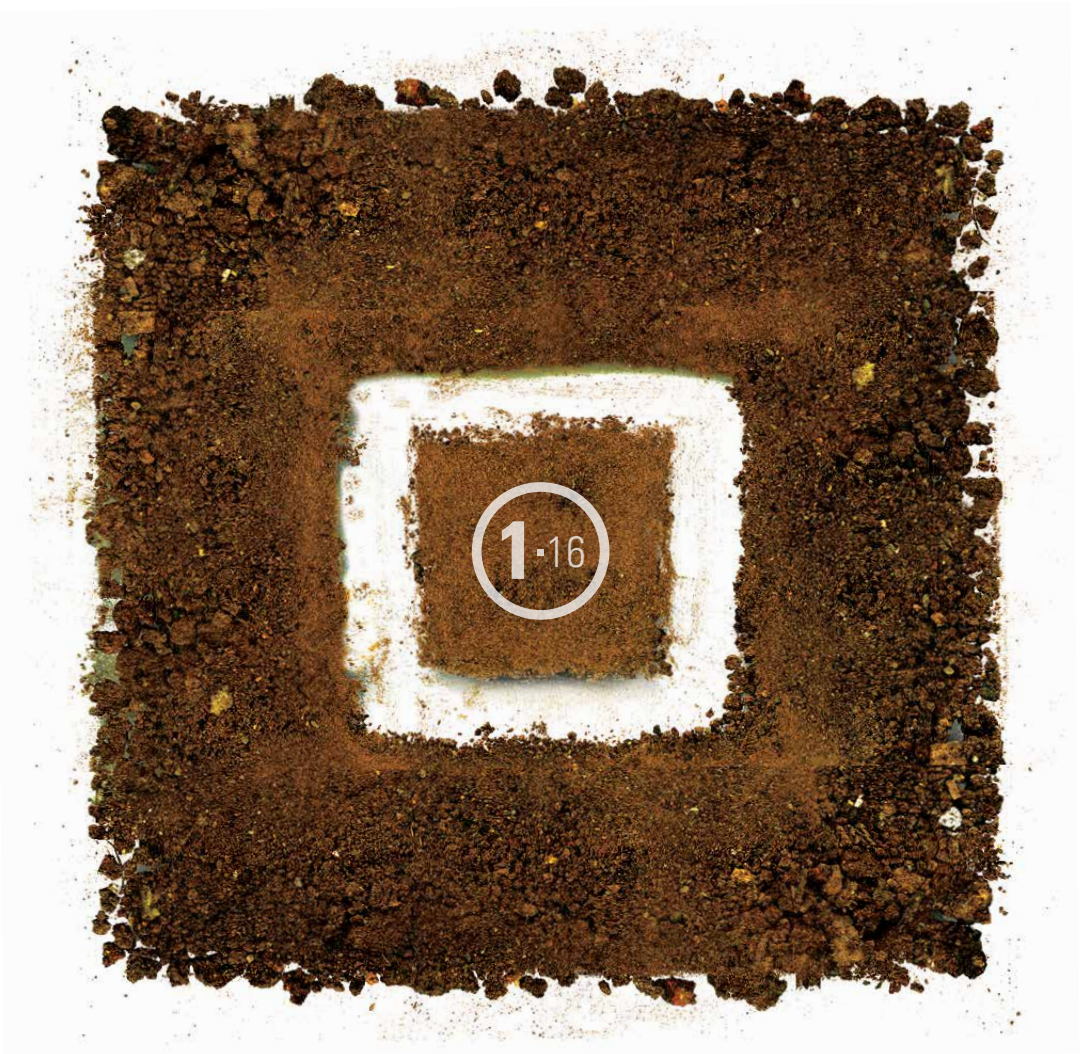

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