

Effectiveness of EU biofuels sustainability criteria in the context of land acquisitions in Africa



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ARTICLE INFO

Article history:

Received 16 January 2015

Received in revised form

26 April 2015

Accepted 2 May 2015

Keywords:

Land investment

Biofuel sustainability

Corporate social responsibility

EU policy

Africa

ABSTRACT

In recent years, land is becoming an important commodity and the land sector in many developing countries has been object of growing foreign acquisitions. The aim of the paper is to analyze whether the requirements set by the EU Renewable Energy Directive introducing biofuels sustainability criteria has induced the European investors acquiring land for producing biofuel feedstocks to adopt more sustainable strategies. First, we review the factors that may induce a corporation to adopt sustainable behavior and corporate social responsibility (CSR) strategies in the context of land acquisitions. Second, the paper illustrates our original evidence on European land acquisitions in Africa and on the behavior of the investors involved. Then, we use a logistic model to estimate the variables affecting the investor's choice to certify its actions and to adopt CSR strategies. Our evidence shows that the main factors influencing the probability that an investor chooses to certify the sustainability of its actions are: the sector in which it operates, the fact of acquiring land in more than one foreign country and the characteristics of origin and destination country. Interestingly, the European economic operators involved in acquisitions for biofuel crops show significantly lower probability of being certified. Therefore, the EU sustainability criteria seem to be ineffective in guaranteeing and verifying the sustainability of the European land investments in Africa. Joint efforts by European Union, Member States, target Countries and private sector operators are necessary to prevent the negative effects of land acquisitions on local stakeholders and the environment.

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1. Introduction

In recent years, land is becoming an important commodity and the land sector in many developing countries has been object of growing foreign acquisitions. International land investments are

increasingly attracting interest from media, but the data on this phenomenon are few and fragmented. Large-scale land acquisitions (LSLAs) are often connected to policy-induced biofuels production by many OECD countries, such as in particular the European Union. In fact, the EU Renewable Energy Directive (RED) sets a target of 20 percent of all EU energy coming from renewable sources by 2020, with 10 percent of transport fuels coming from renewable sources, mainly biofuels [1].

While the new interest in land and agriculture may potentially reverse long-time underinvestment in agriculture and increase

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productivity in the sector, large-scale investments by foreign actors can fail to develop and improve rural local incomes and conditions, and might instead worsen rural wages and livelihood. In regions with weak land tenure and rights, such as Africa, large-scale land acquisitions (LSLAs) often displace and take away resources important for smallholders' food production, without compensating them properly; so threatening livelihood and food security of local communities. Moreover, land acquisitions should take into account the greenhouse gases balance and other environmental impacts of the land use change, such as soil erosion and deforestation.

For these reasons, the European Union has balanced its commitment to biofuels as one option for meeting its renewable energy targets with sustainability criteria for economic operators supplying biofuels to Member States (MS). In the EU Renewable Energy Directive, the European Commission (EC) has demanded that the biofuels in its market meet environmental and social standards, named 'European Union Biofuels Sustainability Criteria' ([1]: Article 1, Paragraph 9; Article 23, Paragraph 1 & 2; Article 17, Paragraph 7). All the biofuels used in the EU, whether locally produced or imported, have to conform to sustainability criteria in order to receive government support or count towards mandatory national renewable energy targets.

This paper aims to understand the effectiveness of the EU policy in matching energy and sustainability targets. It is a first and unique attempt to measure the impact of EU sustainability criteria in the context of foreign land acquisitions for biofuels' purpose. It provides original evidence on the voluntary schemes (vs) and certification adopted by the European investors acquiring land in Africa, in order to analyze whether the EU sustainability criteria have changed their behavior. These economic operators are involved in a wide range of standard, certification and labeling schemes, which have the potential to influence their corporate social responsibility (CSR) strategy; improve business efficiency; reduce risks and increase control on the supply chain [3].

Standards and sustainability certifications in the biofuel industry have been neglected by social science work (for exceptions, see [4–8]). The paper advances knowledge both on the pattern of EU land acquisitions and on the necessary steps to guarantee responsible land investment. First, it provides a detailed analysis based on evidence of the EU investors acquiring land in Africa, categorizing them and examining their CSR strategies. Second, the paper investigates the main determinants of Corporate Social Responsibility and sustainability certification in the context of land acquisitions. Looking at which voluntary scheme each investor follows, this work tries to estimate which factors affect the investor's choice to certify the sustainability of its actions, and whether the EU Sustainability Criteria have affected it.

The study is structured as follows. The next Section describes the main determinants of Corporate Social Responsibility strategy in the literature and in the case of land investment. Section 3 analyses the phenomenon of EU land acquisitions in Africa, and our evidence on the behavior of the investors from the perspective of responsible investment. In Section 4, we adopt a logistic model to estimate the main determinants of the investor choice to adopt standards and certification schemes or to claim sustainability, and we investigate the impact of EU sustainability criteria for biofuels on the probability to make these choices. Section 5 concludes providing some policy implications of our results.

2. Conceptual framework and literature review on the determinants of corporate social responsibility

When environmental and social interests for the society differ from the corporate private interests, markets do not work well.

Large-scale land acquisitions in Africa are an example of economic activity whose external costs are not directly identified with private corporation interests. Environmental and social negative impacts of large-scale land acquisition are relevant but scarcely taken into account by the entrepreneurs. In this situation, there is a role for corporate social responsibility to reduce the conflict between social and private interest [9]. The environmental and social negative spillovers associated with land acquisitions create space for responsible investment initiatives to internalize these externalities in a corporate strategy. We link CSR to sustainability and define it as corporate strategy to internalize (economic, social and environmental) sustainability costs and benefits of its actions. Adopting unsustainable strategies, investors encounter potential costs in terms of conflict with local communities and/or NGOs, reputational and credit risk and financial losses. Hence, in many cases they have incentives to adopt sustainability criteria into corporate social responsibility (CSR) strategies. Behaving in a responsible way can also be a corporate strategy to ensure profits, at least in the medium and long term.

In the traditional literature on Corporate Social Responsibility, several factors have been identified to affect the company choice to act responsible and adopt CSR strategy. Firm size and visibility; market competitiveness; Countries' levels of legal enforcement; relationship with the stakeholders; and self-regulation within the industry (employer–employee relations, macroeconomic environment, industry membership) have been recognized by the literature as factors affecting a firm's decision to behaving well (see for instance [10–13]). Weber [14] identifies five main areas of CSR business benefits: positive effects on company image and reputation; positive effects on employee motivation, retention, and recruitment; cost savings; increased revenue from higher sales and market share; risk reduction. Zezza [15] confirms that factors affecting the effectiveness of certification processes in the context of biofuels production are governance structure of partnerships, demand for certified production, legislation and policy in place, level of enforcement, land tenure and structure of the industry (p. vii).

Several studies demonstrate a link between the corporation's financial performance on the one hand and its environmental or social performance (ESP) on the other. In fact, adopting responsible behavior is often a positive strategy for a company to perform well and to ensure its profits, at least in the long run [9,16,17]. For instance, the Munden project on the financial risks of insecure land tenure finds that 'disregarding customary property rights systems, overlooking the need for consultation, denying adequate compensation, or ignoring dispute resolution may save time and money in the short-term, but it can lead to sizeable expenses down the line' ([18], p. 8). This contributes to create a business case for the company to adopt sustainability requirements in its CSR strategy. The business case for sustainability (BCS) induces a corporation to take into account external and distributional effects of the acquisition and to make its actions sustainable. The sustainability of investment is measured in three dimensions: economic, social and environmental. Hence, from the perspective of sustainability, the first objective is to ensure the long-term economic viability of the productive system. Economic sustainability requires profitability, efficiency and equity. Moreover, the social dimension of biofuel sustainability relates to the potential for rural development, poverty reduction and inclusive growth [3]. Environmental sustainability requires measures such as conservation of areas that provide, in critical situations, basic ecosystem services (such as watershed protection and erosion control); protection of soil, water and air; restoration of degraded land; avoidance of excessive water consumption in areas where water is scarce [19].

In order to discuss the role of Corporate Social Responsibility strategies in land acquisitions, we must identify a 'business case' for acting responsibly for different categories of economic operators. In the context of land acquisition, there are several mechanisms which

induce an investor to adopt responsible behavior. Among them we can enumerate direct cost or delay connected to land disputes with local community, NGOs, or Governments; consumer pressure to have 'fair' products and reputation risk; lost of public subsidies and/or financial support; financial risks. These mechanisms have different weight and impact on different kind of investors. Land disputes and conflicts with local communities or NGOs are a cost that affects almost indifferently each investor who is not carefully involving indigenous people in a Free Prior and Informed Consent (FPIC) negotiation; but this is not true for other mechanisms. For instance, small companies in the energy sector do not meet the same pressure by consumers and reputational risk faced by big agribusiness corporations with a strong brand and by multinational corporations. Still, for biofuels operators, certification schemes can promote better practices, quality and transparency along the entire supply chain, so reducing the risks [3].

Our study focuses in particular on the European Commission requirements for biofuels entering its market. In order to be eligible to receive governmental support and to count for meeting the RED target on renewable energy, locally produced and imported biofuels have to meet some environmental and social sustainability criteria ([1], Article 17). As examined in Section 3.2, the The European Union delegates the evaluation of the sustainability of biofuels entering its market to voluntary schemes approved by the Commission; national system of compliance that each member state is required to develop; and bilateral or multi-lateral agreement [2]. In theory, if the EU policy is effective, all the European investors acquiring land abroad to produce feedstocks then transformed in biofuels used in the EU must be joining one of the approved initiatives, or be certified by a national system or agreement. The EU energy policy should act as important leverage to pressure investors to adopt responsible behavior in order not to lose governmental support and markets' access.

In fact, our evidence shows that most of the European investors acquiring land to grow biofuel crops in Africa are still aiming at introducing their final product into the EU biofuel market. Moreover, if companies involved in biofuels receive support from Governments and public institutions, there is an additional risk of losing subsidies and sponsor if the acquisition encounters relevant environmental or distributional issues.

In making agricultural investment, private agro-food companies with high visibility and strong brand face also a reputation risk and are exposed to consumer boycott [20]. Final consumers often care about the 'fairness' of the good they purchase and may punish companies that are perceived to behave badly from environmental or social perspective.

Credit risk may be another important leverage towards responsible investments. In some cases, supply-chain investors may lose the financial support by Banks and other credit institutions if their actions are controversial and generate disputes that affect the operations. This risk is particular important for companies involved in producing commodities which require a large initial disbursement and significant time to become mature investment, such as fruit or some biofuels feedstocks. These corporations may have to issue high proportions of debt and have a low rate of earning; therefore they are more dependent to financial support than corporations with diversified business [20].

Big investors quoted in the stock exchange or subject to credit rating agency are exposed to further leverages to adopt responsible investment initiatives. Their main threat is delays and losses from conflict and disputes, which increase the investment risks. But the attention of stakeholders and credit rating agency is putting additional pressure on them. In fact, the credit rating of a business has a major impact also on the interest rates it pays when issuing debt to finance commercial activities, therefore a rating downgrade is a signal of vulnerability and may require the

company to raise its capital [18]. If such a company is involved in an investment with delays or controversies affecting its return, the difficulties may be enlarged by a downgrade requiring a recapitalization in a difficult moment. Therefore, investors need to be very careful in estimating the risks of the acquisition in the situation analysis, before starting the operations.

Pension funds may also receive pressure by public attention. For instance, the large Dutch Pension Funds *ABP* was publicly criticized by an alliance of NGOs for having supported the Scandinavian *Global Solidarity Forest Fund's* controversial land acquisition in Mozambique. The case was also discussed in the Dutch parliament, and the Pension Fund had to take measures to improve the situation [20]. Development and Government Funds receive also notable pressure from public scrutiny, and are expected to act responsibly and not to finance unsustainable investments. However, other financial investors, such as Private Equity Funds receive less pressure from public attention, and may not have interest in acting responsibly, unless their shares are traded on the stock exchange [20].

Finally, financial operators play an important direct and indirect role in land acquisitions. Therefore, they can act as an important 'pressure point' to induce the companies that they finance to act responsibly. On the one hand, as the Equator Principles show, financial institutions have sometimes demonstrated interest in the environmental and social performance of the projects they finance [9]. On the other hand, non-governmental organizations and civil society are increasingly scrutinizing the behavior of banks and pressuring them to avoid financing irresponsible projects. For instance, Oxfam Australia has recently accused four big Australian Banks to have funded illegal land acquisitions in Developing Countries [21]. The allegation was reported by several media and forced the Banks to take action and pledge to deal with the claim [22].

This paper looks at our original evidence on the European investors' behavior to analyze whether these 'pressure points', and in particular the EU sustainability criteria, have been effective in influencing their CSR strategy.

3. Data and empirical evidence on investor strategies

3.1. Pattern of EU land investments

We start our analysis looking at the information provided by a new dataset recording international large-scale land deals since 2000 (The Land Matrix Global Observatory). This dataset provides information on the country in which the land is acquired; the investing companies and countries; the purpose of the contract; negotiation and implementation status and size; nature of the deal (lease/concession, outright purchase, exploitation license); data source; contract farming and crop negotiated. The records are derived from a variety of sources, such as research papers and policy reports by international and local organizations and non-governmental organizations, field-based research projects, official government records, company websites, media reports [23].

We carefully investigate each deal, looking for additional sources to match with the information provided by the Land Matrix. So we analyze the acquisitions by European economic operators and the information sources provided on them by the Land Matrix; and we added to them a further investigation on purpose of the acquisition, investor status and behavior in terms of sustainability. We retrieve our additional information from primary sources provided by the investors themselves (statements, reports, and websites) or by evidence provided by third parties (media and academic reports). Looking at each deal into details, we provide evidence on how many partners are involved in the acquisitions; nature of the partnership; role of Governments and

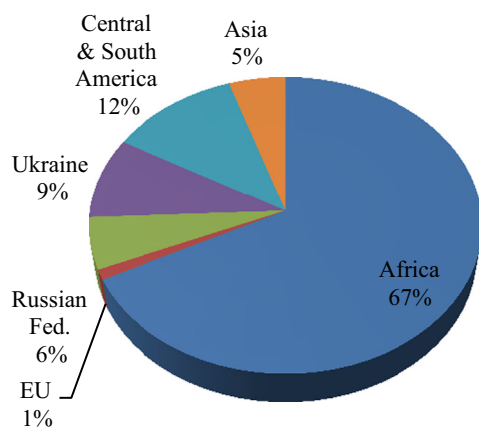


Fig. 1. Total EU's Large-Scale Land Acquisitions by target Region, 2000-2013. *Notes:* *Target Regions:* *African Countries:* Angola, Burkina Faso, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of Congo, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, South Sudan, Uganda, United Republic of Tanzania, Zambia. *EU Countries:* Lithuania, Romania. *Central American Countries:* Costa Rica, Guatemala, Honduras, Mexico, Nicaragua. *South American Countries:* Argentina, Brazil, Chile, Colombia, Paraguay, Peru, Uruguay. *Asian Countries:* Eastern Asia (China), South Asia (India), South-East Asia (Cambodia, Indonesia, Malaysia, Philippines). *Source:* Author's elaboration on Land Matrix Global Observatory data. Accessed data: 19/09/2014

public institutions as well as weight of financial sector in the phenomenon. Above all, we analyze which is the sector of activity of each private and financial investor, and, when possible, who finances the acquisition. Finally, we collect data on which voluntary standard, certification and labeling scheme the investor joins in order to evaluate the impact of the EU sustainability criteria on this investor's decision. We focus in particular on the investments made to produce biofuels' crops.

Since 2000, the European investors have contracted a total of about 8.5 million hectares abroad. In particular, economic operators from the United Kingdom seem to be very involved in land deals: globally they are involved in about one hundred concluded deals for more than 2 million contracted hectares. Many UK investors are financial actors investing in land as financial asset. Other countries whose companies are investing on land are Italy, the Netherlands, Sweden, Luxembourg, France, Portugal and Finland. There are several reasons why EU investors are acquiring land abroad. For instance, while almost all the Italian and Netherlands' acquisitions aim to produce biofuels' crop, companies from Nordic Countries such as Sweden and Finland are mainly acquiring land for wood or forestry purpose. Still, biofuels feedstock cultivation is by far the main purpose for European land acquisitions.

As Fig. 1 shows, the main target region of EU land acquisitions is Africa. About 5.6 ha of African land have been contracted by European investors since 2000. Other relevant target countries are Ukraine and Russian Federation, where investors from Denmark, Lithuania, Netherlands, Sweden, Austria, France and Luxembourg have acquired land to produce biofuels feedstocks such as barley, rapeseed, wheat, sunflower seeds, corn, soybeans, rye and other cereals. Moreover, the European investors have acquired about one million hectares in Latin America, in particular, in Argentina, Brazil and Uruguay, and 400,000 ha in Asian Countries.

The European countries invest vastly on commodities suitable for biofuel production (jatropha, cereals and grain such as barley, oil palm, sunflower, sugar cane, corn, cassava, soya beans, oil seeds, etc.). European acquisitions to produce *Jatropha Curcas* alone amount to more than 2 million ha. Trees such as eucalyptus, teak, pine and others are the second most important target of acquisition, covering about

2 million contracted hectares, and confirm the importance of wood and fiber as source of European investment.

This paper focuses exclusively on the European acquisitions which take place in Africa. This region is by far the main target of European land acquisitions, and it is globally one of the areas receiving more land investment. Moreover, the vast majority of the land transactions in this region are made to grow biofuels commodities. Giovannetti and Ticci [24] show that land availability, abundance of water resources and weak land governance are significant determinants of large-scale land acquisitions for biofuels production in Africa.

According to our analysis, EU investors have acquired almost 4 million hectares in Africa to grow crops suitable for biofuel production, and about 1.5 million ha for non-biofuel purpose (mostly wood or other food crops). Inside Africa, our evidence shows that the first target country of acquisition is Mozambique, where EU investors have acquired about 1.2 million hectares, the majority of which for biofuels purpose. Other about 800,000 ha of land have been acquired in Sierra Leone and Guinea, and 550,000 in Madagascar. As Fig. 2a shows, in some countries such as Sierra Leone, Liberia and Zambia, the acquisitions are made for non-biofuels or flexible crops, while in countries as Guinea and Madagascar the purpose is clearly biofuel crops. We categorize an acquisition as *flexible* when it is impossible to distinguish whether the final use of the crop is the production of biofuel or not, since it is suitable for both purposes². The most important flexible crops in Africa are corn (maize), oil palm, soya bean, wheat and sugar cane.

Fig. 3a shows the importance of private companies, public actors and financial operators in the EU large-scale land acquisitions in Africa. We separate the role played by these investors in case of deals concerning biofuel projects, non-biofuel acquisitions and flexible crops. The Figure shows the importance of each investor measured in terms of percentage presence in the total contracted European LSLAs in Africa, by purpose. Foreign private companies and multinational corporations (MNC)³ are by far the main investors, being involved in the vast majority of the acquisitions, particularly in the deals made for biofuels purpose. Private corporations often invest in partnership with domestic investors or domestic governments of the target country. Domestic public actors are involved in about half of the twenty-one domestic-foreign partnerships. Whereas, domestic private companies act in joint venture with EU entrepreneurs in about ten acquisitions, mostly for biofuel or flexible crops. Finding information on domestic private companies is particularly difficult, and therefore the nature of joint ventures and the level of independence of local investors from the European partners are difficult to assess. In several cases, it is impossible to find any information on the local partner involved in the acquisition.

Moreover, we analyze which is the sector of activity of each private investor, dividing them in few broad categories: agro-food, energy, industry, religious or non profit organization, forestry or wood, investment company and management-consulting. The importance of the different categories of private companies is showed in Fig. 3b. In the 'agro-food' sector we group businesses as food companies (such as palm oil, coffee, fruit, rice, wine company), agricultural companies, agro-industry business (such as juice, rubber, sugar company), aiming at producing food commodities. The 'energy' sector is made of company active in bioenergy,

² In order to classify the final use of one commodity (biofuel, flexible, non-biofuel), we look at the investors statement, or as alternative the sector in which it operates (for instance energy versus food).

³ We define as 'Multinational Corporation' (MNC) any foreign investor involved in more than one acquisition, but only if the acquisitions take place in two (or more) different countries.

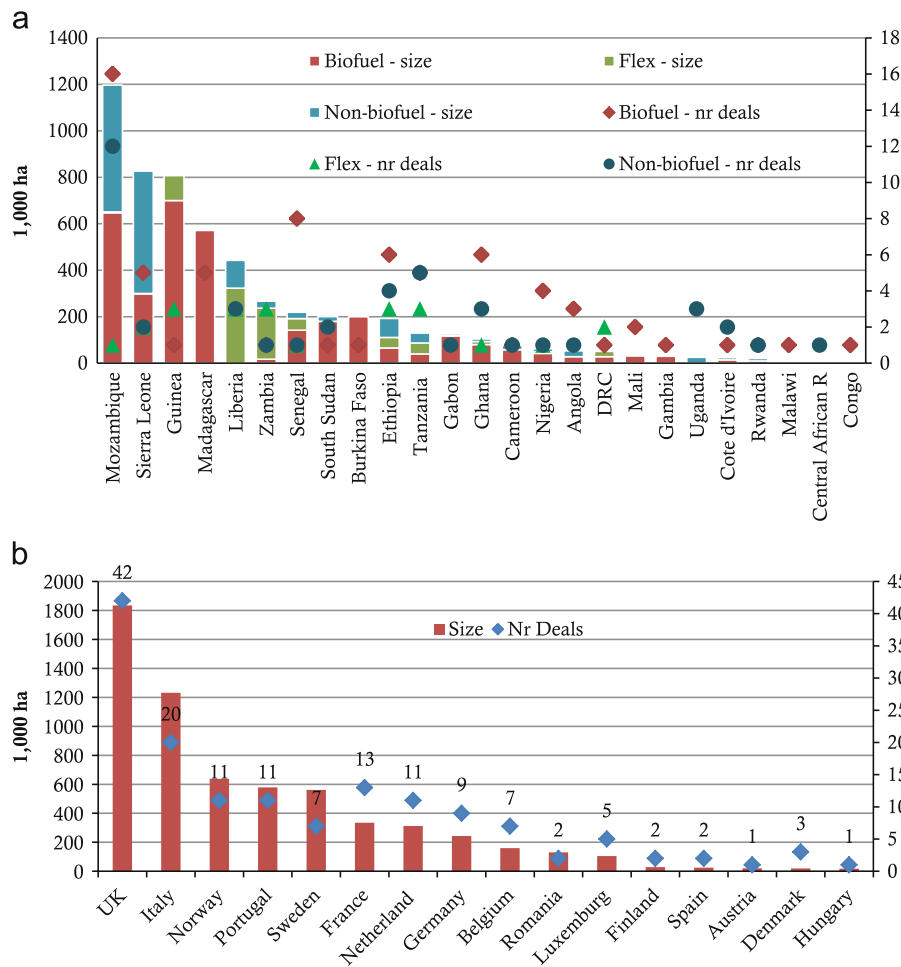


Fig. 2. EU Land Acquisitions in Africa by (a) target and (b) investors' country, in terms of thousand hectares (left axes) and number of deals (right axes), 2000–2013. Note: Non-biofuel acquisitions are made for food crop; wood/conservation/carbon sequestration; livestock; non-food-agricultural commodities; tourism. Source: Author's elaboration on Land Matrix Global Observatory data. Accessed data: 06/02/2014

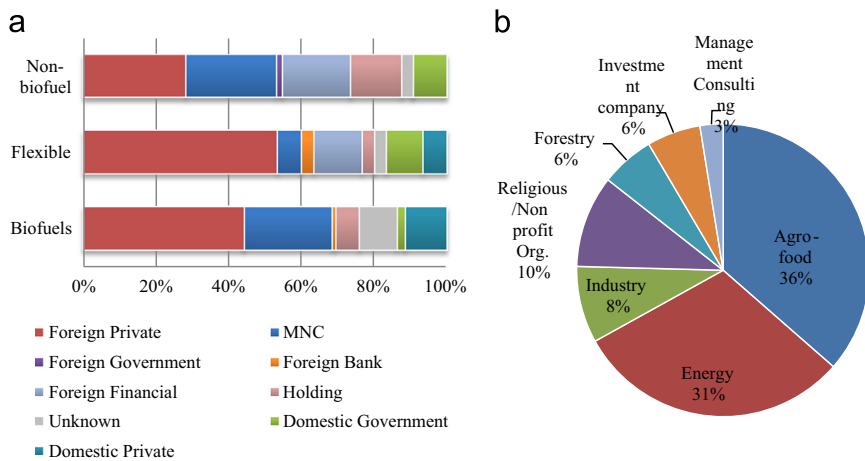


Fig. 3. (a) Direct role of private, public and financial investors in EU Large-Scale Land Acquisitions in Africa for biofuels, flexible and non-biofuel purpose (as percentage weight of the investor in terms of number of deals). (b) EU private investors in Africa by sector of activity. Source: Author's elaboration.

energy, jatropha and renewable energy; whereas the 'industry' sector covers chemistry company, engineering service, industrial service, IT, manufacturing, paper and tires company among others. In the plantation forestry category we find in particular companies from Nordic countries such as Denmark, Norway and Sweden.

Domestic financial institutions have no role in the investments, while European financial operators and holding companies have a

very relevant weight in the Large-Scale Land Acquisitions in Africa. Among the 'foreign financial' actors involved in the acquisitions, we find investment funds, pension funds, venture capital groups, banks, business credit institutions, development and governmental funds and private equity fund. EU financial operators are especially relevant in the acquisitions for non-biofuel crops. This evidence is due to the relevant presence of private and public

Table 1

EU-approved voluntary schemes.

Source: Author's elaboration on European Commission data, accessed 12/12/2014.

Name		Data EC approval	Commodity	Commodity Origin	Extent of supply chain covered
ISCC	International Sustainability and Carbon Certification	19/07/2011	Wide range of feedstocks	Global	Full supply chain
Bonsucro EU		19/07/2011	Sugar cane	Global	Full supply chain
RTRS EU RED	Round Table on Responsible Soy EU RED	19/07/2011	Soy	Global	Full supply chain
RSB EU RED	Roundtable of Sustainable Biofuels EU RED	19/07/2011	Wide range of feedstocks	Global	Full supply chain
2BSvs	Biomass Biofuels voluntary scheme	19/07/2011	Wide range of feedstocks	Global	Full supply chain
RBSA	Abengoa RED Bioenergy Sustainability Assurance	19/07/2011	Wide range of feedstocks	Global	Full supply chain
Greenergy	Greenergy Brazilian Bioethanol verification programme	19/07/2011	Sugar cane	Brazil	Full supply chain
Ensus	Ensus voluntary scheme under RED for Ensus bioethanol production	23/04/2012	Feed wheat	EU	From the first feedstock delivery point to the Ensus One bioethanol storage
Red Tractor	Red Tractor Farm Assurance Combinable Crops & Sugar Beet Scheme	16/07/2012	Cereals, oilseeds, sugar beet	UK	Until the first feedstock delivery point
SQC	Scottish Quality Farm Assured Combinable Crops	24/07/2012	Winter wheat, maize, oilseed rape	North Great Britain	Until the first feedstock delivery point
Red Cert	Red Cert Decision	24/07/2012	Wide range of feedstocks	Europe	Full supply chain
NTA 8080	NTA 8080	31/07/2012	Wide range of feedstocks	Global	Full supply chain
RSPO RED	Roundtable on Sustainable Palm Oil RED	23/11/2012	Palm oil	Global	Full supply chain
Biograce	Biograce GHG calculation tool	30/05/2013	Wide range of feedstocks	Global	Supply chain not covered
HVO	HVO Renewable Diesel Scheme for Verification of Compliance with the RED sustainability criteria for biofuels	09/01/2014	All feedstocks suitable for HVO-type biodiesel	Global	From the producer of HVO-type renewable diesel
GTAS	Gafta Trade Assurance Scheme	03/06/2014	Wide range of feedstocks	Global	From farm gate to first processor
KZR INIG System	KZR INIG System	03/06/2014	Wide range of feedstocks	Europe	Full supply chain
TASCC	Trade Assurance Scheme for Combinable Crops	17/09/2014	Combinable crops, such as cereals, oilseeds and sugar beet	UK	From farm gate to first processor
UFAS	Universal Feed Assurance Scheme	17/09/2014	Feed ingredients and compound feeds as well as combinable crops	UK	From farm gate to first processor

funds in investments for forestry and conservation, which fall into the non-biofuels' categories. Investment funds are in fact often involved in acquisition for wood, forest conservation and carbon sequestration purpose. For instance, the *Swedish Global Solidarity Forest Fund* (GSFF) is involved in four acquisitions in Mozambique for forestry purpose, always in partnership with other foreign funds or holdings, and the Diocese of the Province of Niassa. Despite being an 'ethical investment fund' established by the Swedish and Norwegian Churches and acquired by a large Dutch Pension Fund, *ABP*, the *GSFF* projects have been highly controversial and encountered strong opposition by local peasants [25–27]. Other examples of Nordic Countries' investments in plantation forestry are: the *Nordic Development Fund*, financing a project of re-forestation by the *African Plantation for Sustainable Development* in Ghana [28], supported by the WWF; the Norwegian company *Green Resources*, involved in forestry plantations in Mozambique, Tanzania and Uganda [29]; and the Finnish Fund for Development Cooperation (*Finnfund*), investing in teak in Tanzania, in partnership with the US *Global Environmental Fund* [30].

3.2. Investors' CSR strategies

The detailed analysis of the European investors allows to identify 'pressure points' to ensure responsible land investments from the point of view of sustainable development [31]. For instance, big agribusiness corporations which care about their reputation among customers are more sensitive to sustainability issues, and more likely to adopt some corporate social responsibility measures. Similarly, financial actors may feel pressure from shareholders. Energy companies involved in biofuels should get pressure from the EU sustainability criteria. In order to receive government support or count towards mandatory national renewable energy targets,

economic operators must show compliance with these criteria by being member of EU approved voluntary schemes or national schemes. Since 2011, ninety voluntary schemes have been approved, but despite an increase in the voluntary sustainability certification, 'in no EU do country the sustainability standards cover an important proportion of the feedstock produced' ([32], p. 282).

Our evidence shows that the European investors acquiring land to grow biofuel abroad do not seem to care much about the sustainability criteria set by the EU. In fact, only a large minority of them has joined the EU recognized voluntary standards. Moreover, for what concerns the transposition of the Renewable Energy Directive and the sustainability criteria in national regulation or legislation, the evidence is still unsatisfactory. An Ecofys report based on the statements made by the Member States (MS) shows that during the period 2009–2010 only Austria (partially), Denmark, Estonia, Germany, Hungary and Malta have partially transposed the requirements on EU sustainability criteria [32]. In 2013, Ecofys reports that the transposition of the Renewable Energy Directive in national legislation has been actually implemented only by Germany. Moreover, just Austria, Denmark, France, Hungary (but only for domestically produced biomass), Ireland, Italy, Latvia, Portugal, Romania and United Kingdom have developed a national certification system for biofuels [32]. Their implementation consists mainly in reporting information to some Governmental authority to show compliance with the sustainability criteria. For Denmark, Ireland and the United Kingdom the national scheme consists in ex-post verification of actual data. Several other countries accept the national systems of other MS as means to verify compliance. Often the Member State reports on their progress in the RED implementation do not contain information on how the RED sustainability requirements are transposed in national legislation [32]. Finally, so far we have found no evidence of bilateral or multilateral agreement

between the EU or Member States and other countries to ensure the compliance of EU sustainability criteria for biofuels. Therefore, the voluntary schemes are the predominant instrument to show compliance for the European economic operators.

German and Schoneveld [33] analyze the effectiveness of EU regulation of biofuels' sustainability. They conclude that while the domestic legal system in most EU member states ensures the sustainability of the domestically produced biofuels, some voluntary schemes are not able to effectively guarantee 'social sustainability' [33]. They analyze social components and procedural effectiveness of the first seven EU biofuel certification programs approved on July 2011: Albengoa RED Bioenergy Sustainability Assurance (RBSA); Biomass Biofuels Sustainability Voluntary Scheme (2BSVs); Bonsucro EU; Greenergy (Greenergy Brazilian Bioethanol verification programme); ISCC (International Sustainability and Carbon Certification); RSB EU RED (Roundtable of Sustainable Biofuels EU RED); RTRS EU RED (Round Table on Responsible Soy EU RED). The authors finds that two of them (RBSA and 2BSVs) lacked of any commitment to social sustainability and take a minimum compliance approach. As a consequence, the biofuels imported from non-EU Countries may have certifications which do not ensure compliance with sustainability requirements. German and Schoneveld's results suggest that the voluntary schemes may not be enough to ensure sustainability of biofuels.

Since 2012, the EU has approved twelve more voluntary schemes (Table 1)⁴. As Table 1 shows, five of the nineteen initiatives are one-commodity-specific instrument (Bonsucro, RTRS, Greenergy, Ensus and RSPO) and other five cover only a few crops (Red Tractor, SQC, HVO, Trade Assurance Scheme for Combinable Crops, Universal Feed Assurance Scheme). Still, the majority of the voluntary schemes addresses a wide range of biofuels feedstocks (RSB, 2BSVS, RBSA, RED cert, NTA 8080, Biograce GHG calculation tool; Gafta Trade Assurance Scheme, KZR INIG System). Table 1 shows also that not all the voluntary schemes are global in scope: almost half of them are specific to the feedstocks originated in one Country of Area. For instance, Red Tractor, Trade Assurance Scheme for Combinable Crops and Universal Feed Assurance Scheme are specific to the UK originated feedstocks; Scottish Quality Farm addresses the North Great Britain area; Greenergy targets only the Brazilian sugar market; while Ensus, RED cert and KZR INIG system cover the feedstocks produced inside Europe. Still, this study shows that also the voluntary schemes with a global coverage are scarcely taken into account by the European investors acquiring land in Africa for growing biofuels feedstocks. Finally, the EU-approved voluntary schemes vary in terms of extent of supply chain covered (Table 1). The majority of the initiatives covers the full supply chain, but some cover only from the first feedstock delivery point, or from the delivery point to the storage. Three recently approved schemes cover the chain of custody from farm gate to first processor.

In what follows, the paper explores the EU economic operators acquiring land in Africa as named in the Land Matrix Global Observatory dataset, and looks at their commitment in terms of sustainable investment and corporate social responsibility. The results of a preliminary analysis are shown in Fig. 4. For each deal, we look at the statement of the investor and the evidence on its behavior in terms of responsible investment⁵. We classify as

Certified CSR all the deals in which the investor is able to show participation in some standard, certification or labeling voluntary scheme. We define *Claimed CSR* the deals in which the investor 'talks about' corporate social responsibility or sustainable behavior, but does not provide certification because it actually refers to small development projects or benefits for local communities. In fact, corporate social responsibility strategies as well as sustainable investments are different from charitable or philanthropic initiatives [9]. Finally, we divide the cases in which we assess that the investor does not make any statement on responsibility or sustainability of its action (*No CSR*) from the deals in which there are no information on the investor (*No info*).

Fig. 4 shows the percentages of deals which prove certified behavior, claim responsibility, demonstrate no attention towards sustainability issue or provide no information on the investor acquiring the land. The acquisitions are divided into three categories according to their purpose. We identify 72 deals for biofuels production, 23 for flexible crops and 44 for purposes other than biofuels. A first counterintuitive result is that the acquisitions for biofuel and flexible crops seem to show much less attention toward sustainability and Corporate Social Responsibility. Fig. 4 shows that the investors involved in land acquisition for biofuels feedstocks are able to demonstrate participation in voluntary scheme in only one fourth of the biofuels purpose deals. In about fifteen other acquisitions (20 percent), the operator claims some sustainability or responsibility of its action, but does not provide any evidence of it (*Claimed CSR*). In about one third of these acquisitions, the investor does not show to care about sustainability and does not mention any responsibility issue connected to its activities (*No CSR*). Finally, there is no information on the behavior of the investor in terms of sustainability for more than 20 percent of the deals (*No info*). A similar pattern applies to the few acquisitions for flexible crops, but with a much higher percentage of *claimed CSR* deals (about 40 percent).

For what concerns the investors involved in acquisitions for non-biofuel purposes, they are certified by standard, certification and labeling initiatives in more than 60 percent of the deals, and claim responsibility in another 7 percent of cases. In only 15 percent of the deals there are no information of the investor's behavior in terms of sustainability; while for only three non-biofuel acquisitions there are no information on the investor (6 percent). An exhaustive list of the standard, certification and labeling initiatives named by the investors in the different categories is showed in Table 2.

As Table 2 shows, the EU investors do not seem to comply effectively with the sustainability criteria set by the RED in 2009. The voluntary schemes approved by the European Union are rarely joint by the EU companies, even if involved in biofuel acquisitions. Out of our 140 deals, more than half of which for biofuels purpose, only about ten acquisitions are certified by the EU-approved voluntary schemes. Among the nineteen EU approved initiatives, only four are named by the EU investors acquiring land in Africa: Better Sugarcane Initiative (now Bonsucro), International Sustainability and Carbon Certification, Roundtable on Sustainable Palm Oil and Roundtable for Responsible Soy. Two of them, ISCC and RSPO, are joined also by investors involved in non-biofuel acquisitions.

A part from these EU voluntary schemes, the European investors involved in acquisitions for *biofuel* feedstocks or *flexible* crops join a variety of other initiatives and certification: Common Code for the Coffee Community (4C); the EU Eco-Management and Audit Scheme (EMAS); Forest Stewardship Council (FSC); Food Safety System Certification (FSSC 22000); Fairtrade (FT); the Global Impact Investing Network (GIIN); Global Reporting Initiative (GRI); International Finance Corporation (IFC); International Organization for Standardization (ISO 9001; ISO 14001; ISO 22000; ISO 26100); Jatropha Alliance (JA); Health and Safety

⁴ The complete list of the EU Recognized Voluntary Schemes is publicly available at (http://ec.europa.eu/energy/renewables/biofuels/sustainability_schemes_en.htm) and at (http://ec.europa.eu/energy/renewables/biofuels/doc/sustainability_schemes/voluntary_schemes_overview.pdf), accessed 20/11/2014.

⁵ Our dataset reports the information on each deal and not on each single investor, because an investor involved in multiple acquisitions can be certified by a commodity-specific initiative when it acquires land to grow that specific feedstock, but may not be certified when acquiring land to grow other crops in a different deal.

Standards (OHSAS 18001); Rainforest Alliance (RA); Sustainable Bioethanol Award (SBA); UTZ certification for coffee, cocoa or tea (UTZ).

We find therefore four types of certification system [15]: internal corporate self-regulation (first-party certification, such as the SBA initiative); business associations which establish standards and verify compliance (second-party certification, as for instance

Bonsucro and RSPO); multi-stakeholder initiatives with non-corporate governing bodies (third-party certification, such as RA, Bonsucro); and initiatives managed by governments or multilateral agencies (fourth-party certification, as the EU EMAS).

Still, none of these initiatives is able to prove the sustainability of land acquisition from the economic, social and environmental point of view, since they are commodity-specific (4C and UTZ); forest-related (FSC and RA); connected to issues such as product quality or food safety (FSSC 22000, ISO 9001, ISO 22000), environmental criteria (EMAS, ISO 14001) and employers protection initiatives (OHSAS 18001); or providing general indications of responsible investment (GIIN, GRI, IFC) which do not cover land deals, neither do they address biofuels feedstocks [34]. Only the Jatropha Alliance (JA) initiative and the Sustainable Bioethanol Award (SBA) initiative are related to the production of crops for biofuel. Jatropha Alliance commits its members to the principles developed by the Roundtable of Sustainable Biomaterials (RSB) and so provides sustainability criteria for land acquisitions [35]. The verified Sustainable Bioethanol Award initiative, developed by the Swedish company SEKAB together with Brazilian ethanol producers, requires ethanol producers to be verified by an independent international company performing on-site checks [36]. However, the schemes credibility has been reduced by the irresponsible behavior of SEKAB in one land acquisition in

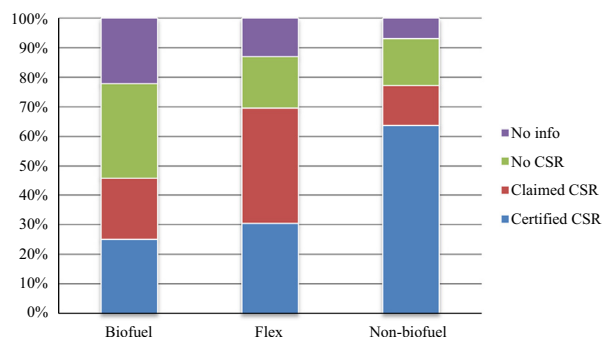


Fig. 4. Importance of Corporate Social Responsibility in EU LSLAs in Africa, as percentage of total deals, by purpose.

Source: Author's elaboration.

Table 2

Coverage and importance of voluntary schemes for EU LSLAs in Africa.

Source: Author's elaboration.

	Biofuel	Flexible	Non-biofuel	
EU approved biofuels voluntary schemes				
Bonsucro	*			Better Sugarcane Initiative
ISCC	*		*	International Sustainability & Carbon Certification
RSPO	*	*	*	Roundtable on Sustainable Palm Oil
RTRS	*			Roundtable for Responsible Soy
Other voluntary initiatives and certifications				
4C	*			Common Code for the Coffee Community
ASPI			*	ASPI Eurozone® Index
CDM			*	UN Clean Development Mechanism
DJSI			*	Dow Jones Sustainability Indexes
EMAS	*			Eco-Management and Audit Scheme
ESI			*	Ethibel Sustainability Index
ETP			*	Ethical Tea Partnership
EURONEXT VIGEO			*	NYSE Euronext Vigeo indexes
EuropeGAP/GlobalGAP			*	Europe/Global Good Agricultural Practice
FSC			**	Forest Stewardship Council
FSSC 22000	*			Food Safety System Certification 22000
FT	*		*	Fairtrade
GCPF			*	Global Crop Protection Federation
GIIN	*			Global Impact Investing Network
GRI	*		*	Global reporting Initiative
ICP			*	International Coffee Partners
IFC			*	International Finance Corporation
ISO 9001	*	*	*	Quality management
ISO 14001	**	*	**	Environmental Management
ISO 22000	*			Food Safety Management
ISO 26100	*			ISO 26000—Social Responsibility
ISOA			*	International Stability Operations Association
JA	*			Jatropha Alliance
OHSAS 18001	*	*		Health and Safety Standards
PEFC			*	Program for Endorsement of Forest Certification
RA	*			Rainforest Alliance
REDD			*	UN Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
SBA	*			Sustainable Bioethanol Award
UNGC			*	United Nations Global Compact
UNPRI			*	United Nations Principles for Responsible Investing
UTZ	*			UTZ Certified Coffee, Cocoa or Tea
WBCSD			*	World Business Council for Sustainable Development

Note: The importance of each voluntary scheme is measured by the number of deals covered by it.

* Less than 5 deals.

** 5 to 9 deals.

Tanzania. In fact, in 2005, SEKAB acquired 22,500 ha of arable land in Tanzania for the production of sugar to be transformed in ethanol. However, the project failed because, since the Company did not complete a financial feasibility study and presented a fraudulent impact assessment report, it was denied a credit guarantee by the Swedish International Development Cooperation Agency's (SIDA), which was necessary to access capitals from Tanzanian Banks [18].

There are several aspects which are important to ensure the sustainability of the investment in the context of land acquisitions. For instance, Markevicius et al. [37] identify 35 different sustainability criteria for biofuels. The majority of them are focused on environmental issues, a few are social and only one is economic. Generally, the main concerns regard greenhouse gases and energy balance, while social criteria and food security are usually taken in low consideration. In fact, Van Dam et al. [7], overviewing 67 certification initiatives to safeguard the sustainability of bioenergy, find out that most of them have mainly included environmental principles. The socio-economic impacts of bioenergy production are generally not included in the analyzed bioenergy initiatives. Moreover, they rarely consider impacts from Indirect Land-Use Change (ILUC) in their standards [7]. For instance, from a social point of view, legal and customary land rights of traditional users should be recognized and protected by means of consultation and free prior and informed consent (FPIC) on the transaction. Then, environmental protection of soil, water and areas holding high conservation values (HCV) and high biodiversity should be guaranteed. Moreover, the additional pressure on land generated by the demand for biofuels may cause a displacement effect of food and feed, and worsen food security.

The European Union has tried to address the issues connected to the additional pressure on land generated by its biofuel target by setting sustainability criteria. Still, they address mainly greenhouse gas reductions and biodiversity [1]. The RED states that the greenhouse gas emission saving from the use of biofuels shall be at least 35 percent. Moreover, European Union's biofuels regulation recognized the protection of biodiversity. Article 17.3 in the Directive 2009/29 states that the raw material for biofuel cannot be obtained from land with high biodiversity value, 'namely primary forest and other wooded land [...]; areas designated by law or by the relevant competent authority for nature protection purposes or for the protection of rare, threatened or endangered ecosystems or species [...], unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes; highly biodiverse grassland' [1]. In addition, the Member States should, every two years, report 'on the impact on social sustainability in the Community and in third countries of increased demand for biofuel, on the impact of Community biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues' ([1], Art. 17.7). Moreover, the Reports shall address the impact on quality of soil, water resources and water quality, as well as the respect of land-use rights. Finally, the MS should ratify and implement a number of Conventions of the International Labour Organisation (ILO) and other protocols ([1], Art. 17.7).

According to our evidence, most of the voluntary initiatives named by the European investors involved in land acquisitions in Africa do not cover the aspects connected to land use change. They often provide some social requirement addressing human right and labor condition criteria, as set by International agreements such as the Human Rights' Convention and the ILO standards, or some general environmental criteria. However these general requirements are insufficient to guarantee that the large-scale land acquisitions happen in a sustainable way. For instance, they almost never consider land rights and FPIC procedures. As we have mentioned, German and Schoneveld [33] found that even some of the EU

approved voluntary schemes do not provide sufficient standards and procedural effectiveness to ensure the sustainability of biofuel⁶.

4. Econometric approach and results

This paper looks at which factors influence the investor choice to adopt standard and certification schemes in the context of LSLAs, and analyzes whether the EU Renewable Energy Directive setting sustainability criteria is an effective 'pressure point' for inducing corporations to act in a responsible way. In order to do so, we adopt an econometric logistic regression to estimate the variables affecting the probability that an investor joins some voluntary schemes (VS) or CSR strategy (CSR), paying particular attention to the effect of EU sustainability criteria.

The first two specification of the model adopts as dependent variable the probability that an acquisition is endorsed by any of the schemes mentioned above (*CRSreal*), and not only the EU-approved voluntary initiatives for biofuels (RSPO, Bonsucro, ISCC, RTRS). In fact, the VS approved by the EU are present in only nine deals, so it was not possible to use their adoption as dependent variable⁷. In the third and fourth specification, the model adopts as dependent variable the decision of *claiming* to take into account sustainability or to adopt CSR strategies (*CSRclaim*). In fact, for about 25 deals the investor declares to consider sustainability issues, but does not provide any external certification of its intentions. In these specifications, these acquisitions are added to the ones in which the sustainability statement is matched with some voluntary schemes participation or certification. Seventy-eight deals result therefore claiming Corporate Social Responsibility strategies or sustainable activities (*CSRclaim* takes the value 1). Forty-four are not (*CSRclaim* equals 0), whereas for the remnant there is no information on the investor choice.

The logistic model aims to estimate which factors are successful pressure factors to affect the decision of a corporation to invest responsibly and certify its actions. For instance, if the EU sustainability criteria are effective, we expect the land acquisitions made for growing biofuel crops (*Biofuel*) to show voluntary schemes' partnership. We assume that an economic operator in the biofuels sector will still prefer to be certified by any initiatives, even not approved by the Commission, because this may be used also for getting approval by national systems. In fact, in several cases, the national systems require just ex-post verification to show compliance with the EU sustainability criteria, so the investor may get advances by showing membership in voluntary systems proving the economic, social or environmental sustainability of its actions. Or, at least, the economic operator may be willing to state its good intentions in terms of sustainability.

We also expect that the fact of being a multinational corporation (MNC, acting in several different foreign Countries) or a financial actor (*F_Fi*) may increase the probability of having the land acquisition certified, because it exposes the operator to higher public or shareholders attention, increasing its reputation risks. Therefore, we introduce a dummy for the presence of multinational corporations (*mnc*) and a variable counting the number of foreign financial operators involved in the acquisition (*F_Fi*). Moreover, the sector in which the company operates may be a relevant variable (*Sector*⁸), the agro-food companies being more

⁶ A description of the aspects that an initiative should address to assure responsible LSLAs, and of the effectiveness of the schemes which are trying to deal with these issues is provided by Bracco [34] and Scarlat and Dallemard [5].

⁷ The logistic regression with the probability of adopting EU-approved voluntary schemes (vs) as dependent variable does not achieve convergence.

⁸ As in Table 3b, we introduce seven broad categories of Sector: Agro-food (44), Energy (40), Forest (7), Industry (6), Investment Company (14), Management/Consulting (2), Religious/No Profit Organization (7) and Unknown (3). On top of

subject to consumer scrutiny, and the forestry-wood investors facing strict certification requirements for their actions. We also introduce a *Holding* dummy for holdings, in order to estimate which kind of probability these entities have to certify their behavior in the context of land acquisitions. They are in fact actively participating in the European land investment in Africa, not only in acquisitions for biofuels purpose (Fig. 3a).

Also the fact of working in partnership with other actors may increase the probability of the acquisition to be responsible, since it is enough one of the partners to be joining some initiative for the product to be certified. The model presents a dummy variable for acquisitions made jointly by European and target country investors (domestic-foreign Partnership, *Partner_DF*), and a dummy for the presence of joint ventures made only by foreign operators (only foreign Partnership, *Partner_FF*). Moreover, we introduce also a variable for the number of investors involved in the acquisition (*nr_com*) and a variable for the presence of domestic partner companies (*Dom_Com*). Furthermore, we want to see the effect of acquiring land in partnership with public entities, which in theory should take into consideration the sustainability of the investment. So, we introduce both a variable for the acquisitions which involve also domestic governments or governmental institutions⁹ (*Dom_Gov*) and a dummy for the presence of EU member state's governmental institution (*For_Gov*). Finally, we look if the size of the acquisition (*size*) is relevant for the decision of acting responsibly, expecting a positive correlation between the hectares contracted and the investor's pressure toward certification. Therefore a first specification of our model is:

$$\begin{aligned} \text{logit CSR}(1) = & f(d_1 \text{ biofuel } a \text{ nr_com } \beta \\ & \text{partner_df } \chi \text{ partner_ff } \delta \text{ dom_com } \phi \text{ dom_gov} \\ & d_2 \text{for_gov } \gamma \text{ sector } d_3 \text{ holding } d_4 \text{mnc } \eta \text{ fi } \varphi \text{size}) \end{aligned} \quad (1, 3)$$

where the dependent variable is *certified* CSR in the first specification (*CSRreal*), and *claimed* CSR in the third (*CSRclaim*).

Another important variable is the country's attitude toward land acquisition, so we introduce two further specifications of the model including target and origin countries variable (the second specification for *CSRreal* and the forth for *CSRclaim*). Some domestic countries are welcoming foreign land investment without aiming at regulating the phenomenon or asking any warrantee for the behavior of the investor in terms of sustainability, while others have stricter legislation and monitoring. Moreover, in some countries the regulatory environment can favor the start and operation of a business. Therefore, we introduce a variable collecting the difference in business climate between the African destination countries. The variable is taken from the *Doing Business* dataset, ranking all the economies on their ease of doing business. A high ease of doing business ranking means that the regulatory environment is more conducive to the starting and operation of a local firm¹⁰. The Sub-Saharan Countries' rank varies from the 28th position of Mauritius to the last position (189th), taken by Eritrea. We name the variable representing the business ranking of the target countries *Target_B*. The higher the value of the variable (the worst the position in the rank), the lower is the business environment in the country. Finally, the model adopts a variable to collect the information on the variation between each

EU single origin country's attitudes toward certification in the context of land acquisition (*EU_C*).

These further specifications of our model are represented here:

$$\begin{aligned} \text{logit CSR}(1) = & f(d_1 \text{ biofuel } a \text{ nr_com } \beta \\ & \text{partner_df } \chi \text{ partner_ff } \delta \text{ dom_com } \phi \text{ dom_gov} \\ & d_2 \text{for_gov } \gamma \text{ sector } d_3 \text{ holding } d_4 \text{mnc } \eta \text{ fi } \varphi \text{size } \lambda \text{ target_b } \mu \text{ eu_c}) \end{aligned} \quad (2, 4)$$

where the dependent variable is *certified* CSR in the second specification (*CSRreal*), and *claimed* CSR in the fourth (*CSRclaim*).

Table 3 shows the results of the estimates on the probability that an investor chooses to adopt sustainability certification (*CSRreal*) or to claim of behaving in a responsible manner (*CSRclaim*). A first interesting result confirming our preliminary analysis of the data is that biofuel as purpose of land acquisition affects significantly and *negatively* the probability that the investor shows CSR strategies, regardless the specification. Contrary of what one should expect given the EU sustainability criteria, investors involved in the acquisition for biofuel feedstocks are not likely to be certified and/or to care about their behavior. Deals made for growing food crops or for forestry-wood purpose show much more attention of the investor toward certification and sustainability.

A first reason why many investors do not join the existing biofuel voluntary schemes may be that these systems are often led by large-scale agro-industry, and the cost structure of certification is out of reach for most small companies [3]. We see in fact that being multinational corporation (*MNC*) is significantly and positively affecting the choice to join standard and certification schemes. A second reason which might reduce the investor interest in certifying the feedstock is its multiple uses (e.g. food, feed, fiber and fuel), which makes difficult to require compliance with sustainability criteria for only the biofuel use [38]. What is needed to avoid this concern is a sustainability regulation of the feedstock supply chain irrespectively from its single final use. Moreover, the vast number of biofuels voluntary schemes approved by the EU may generate positive pro-competitive effects in the certification market (e.g. development in implementation, monitoring and verification tools), but then again it could generate confusion and inconsistency [3]. On the one hand, some 'democratic' sustainability roundtables have adopted a complex web of institutional and governance features and managerial systems that are time- and resource-consuming for the stakeholder. On the other hand, commercially-oriented initiatives are generally less democratic, with top-down governance structures which are quicker and friendlier to industry interests, but therefore tend to be less inclusive and discriminate against small stakeholders. According to Ponte [4], investors may prefer sustainability initiatives that are less inclusive and democratic, but have a more industry-driven agenda and adopt quicker and more commercially-oriented procedures. Still, the pressure from social society and NGOs on commercially-oriented schemes is inducing them to adopt more inclusive procedures and institutional features, which favor the effective participation by smaller or marginalized stakeholders.

The fact of acquiring land in partnership and the nature of the partnership seem not to affect significantly the investor choice to certify its action. In fact, the number of actors involved in the investment (*nr_com*), the partnership variables (*partner_df*; *partner_ff*), and the presence of domestic company or domestic government (*dom_com*; *dom_gov*) do not have a significant impact on the dependent variables *CSRreal*. Still, in the case of claimed responsibility (*CSRclaim*), working in partnership with other foreign operators (*partner_ff*) affect positively and significantly the probability of caring about sustainability issues. This result is not surprising given the reputation risks and market access reduction linked to unsustainable practices. The *for_gov* dummy is omitted in

(footnote continued)

this, when an holding is the only investor, we add the category Holding (12). If the holding is one of partnership in the deals, we account for it with the dummy variable *Holding*.

⁹ In one acquisition, there are four Nigerian State Governments involved in the deal (Edo State Government, Delta State Government, Ogun State Government, Ondo State Government) [23].

¹⁰ Doing Business dataset is accessible at (<http://www.doingbusiness.org/rankings>).

Table 3
Estimation results.

Dependent variable	CSR _{real}		CSR _{claim}	
	(1)	(2) Country F.E.	(3)	(4) Country F.E.
<i>biofuel</i>	−3.076*** (0.738)	−3.605*** (0.833)	−2.984*** (0.769)	−3.215*** (0.804)
<i>nr_com</i>	−0.556 (1976.362)	0.566 (1588.698)	−2.397 (1.731)	−2.372 (1.940)
<i>partner_df</i>	−15.802 (2901.151)	−16.208 (2131.432)	4.071 (2.801)	5.154 (3.379)
<i>partner_ff</i>	1.448 (1976.362)	0.704 (1588.698)	3.936** (1.951)	4.164* (2.324)
<i>dom_com</i>	0.747 (1.862)	−0.487 (1.987)	0.250 (1.399)	−0.577 (1.652)
<i>dom_gov</i>	17.529 (1649.274)	16.550 (1372.729)	(Omitted)	(Omitted)
<i>for_gov</i>	(Omitted)	(Omitted)	(Omitted)	(Omitted)
<i>sector</i>	0.230*** (0.121)	0.226* (0.131)	0.264*** (0.117)	0.168 (0.132)
<i>holding</i>	−2.539** (1.252)	−1.266 (1.317)	−1.906* (1.065)	−0.780 (1.177)
<i>mnc</i>	1.609*** (0.650)	1.200* (0.741)	0.449 (0.597)	−0.103 (0.677)
<i>f_fi</i>	−1.756 (1.923)	−2.825 (1.900)	−1.801 (1.941)	−2.884 (1.916)
<i>size</i>	−2.87e−06 (3.58e−06)	−2.43e−06 (3.23e−06)	−6.22e−06 (5.31e−06)	−4.81e−06 (4.55e−06)
<i>target_b</i>	−	0.018* (0.011)	−	0.014 (0.009)
<i>eu_c</i>	−	−0.144* (0.084)	−	−0.129 (0.081)
<i>_cons</i>	0.0843 (1976.36)	−0.555 (1588.698)	3.820*** (1.871)	4.00* (2.394)
Number of obs	95	95	92	92
LR chi²(df)	53.59	60.81	37.80	43.66
Prob > chi²	0	0	0	0
Log likelihood	−38.794	−35.188	−43.799	−40.872
Pseudo R²	0.41	0.46	0.30	0.35

Notes: Standard errors in parentheses.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

all specifications because in no case a EU member State government intervenes directly in the acquisition.

In three specifications, the choice of the investor to be certified or to claim responsibility depends significantly on the Sector in which it operates. This result confirms the hypothesis that both the structure of the industry and the different business exposure (to public, financier or consumer scrutiny) affect the CSR strategy of the investor. In this context, it is also not surprising that the fact of being involved in more than one deal in different target countries (*mnc*) is significantly affecting the company choice to certify its behavior, in the first two specifications. Bigger investors are in fact more exposed to the risks connected to unsustainable CSR strategies; therefore have bigger pressure to be endorsed by voluntary initiatives. Moreover, they are more likely to have the capital needed to join the certification schemes than smaller investors.

It is also interesting to notice that Holdings and actors such Bank, Business credit institution, Development fund, Governmental fund, Pension fund, Private equity fund, Venture capital group and above all Investment funds, (*f_fi*) show a negative attitude towards sustainability standards and certification systems. In fact both the *holding* and the *f_fi* variable have a negative and quite significant (p -value close to 0.20 in the first specification) impact on the choice to adopt CSR strategies. The *holding* dummy is affecting negatively and significantly the probability of caring about CSR in the first and in the third specification. The evidence on financial operators is showing that Socially Responsible Investment (SRI) Funds are lacking in the context of land acquisitions in Africa. Unfortunately, this may also be a signal of the presence of speculative actors acquiring land to diversify their portfolio or as an asset against inflation [39,40], without aiming at making a sustainable productive use of the land.

The size of the contracted land (*size*) seems to have to no clear effect on the investors' choice to behave in a sustainable way, regardless the specification. The size variable affects neutrally and insignificantly the probability of adopting CSR strategies. The average contracted area is about 40,000 ha, while the biggest acquisition reaches 700,000 ha.

Finally, in the second and fourth specification the model introduces country variables to capture fixed effects. The target country

variable (*target_b*) is quite significant (p -value equals 0.10 in the first and 0.13 in the fourth specification), and positive. This means that the worst is the rank of the country in the ease of doing business, the more the investor has incentive to certify its action. This might reflect the preference of big (certified) investors toward countries with weak land tenure [24], or the fact that, when investing in countries which a weak business environment, EU economic operators may prefer to join partnerships to reduce their risks. Finally, also the EU country variable (*EU_c*) is significant, showing some difference in the behavior of the investors according to country they come from¹¹.

5. Conclusions and policy implications

Land use change connected to international large-scale land acquisitions involves several environmental and social aspects, which may jeopardize the sustainability of the investment. In order to be sustainable, the investment should be economically viable and ensure rural development, poverty reduction, inclusive growth and environmental protection in the long term [3]. In particular, the policy-driven demand for biofuels from developed countries has put additional pressure on land in many poor regions, among which Sub-Saharan Africa. The European Union has recognized that when the land is diverted from pasture or agriculture to biofuels production, the food and feed demand still need to be satisfied either through intensification or by bringing non-agricultural land into production elsewhere [19]. This may cause the conversion of high carbon stock land and lead to significant greenhouse gas emissions. Moreover, the production of first-generation biofuel production from food crops contributes

¹¹ We have repeated the estimation with a further specification including a dummy variable for each EU country, but the results are not strongly significant because of the few observations reported by most countries, therefore we do not report the estimates here. The only dummy variable slightly significant was found for the UK, having a negative effect on the probability of adopting CSR strategies. This result may be linked to the relevant presence of holdings among UK operators.

to food price increase and volatility, and may have significant negative effects on livelihoods and human rights such as the right to food or access to land for local communities living in developing countries [19].

Therefore, the European Union has attempted to reduce some of the drawbacks connected to its biofuel target set by the Renewable Energy Directive. Not only in the Directive 2009/28/EC and 98/70/EC the EU has introduced the sustainability criteria that we have analyzed in the paper, but for the medium and long-term solution it has recently encouraged research and development in second and third biofuels generations, which are not in competition with food crops, and further analysis on the effect of different feedstocks on direct and indirect land-use changes ([19], Amendment 8). In 2013, the EU has increased the mandatory share of energy from advanced biofuels (no less than 2.5 percent of the final consumption of energy in transport in 2020) and reduced the share of energy from biofuels produced from cereal and other starch rich crops, sugars, oil and other energy crops grown on land (no more than 6 percent) ([19], Amendment 181). Still, in the present context of the biofuels sector, where the large majority of the feedstocks are food crops or compete with food crops for the land, the sustainability of land investment must be addressed. Therefore, the European Union requires the 'Commission to report every two years [...] on the impact on social sustainability in the Union and in third countries of increased demand for biofuel, on the contribution of biofuel production to reducing the Union's shortage of vegetable protein and on the impact of Union biofuel policy on the availability of foodstuffs at affordable prices, in particular for people [...] in developing countries, and [...] wider development issues' ([19], Amendment 50). This paper is a first attempt to evaluate the effectiveness of the EU policy in matching its energy and sustainability targets.

This study is the first work to show evidence on the behavior of the European investors acquiring land in Africa in terms of sustainability and Corporate Social Responsibility. In fact, a company may find short and long term benefits from introducing sustainable criteria into its CSR strategy. The main factors influencing the probability that an investor chooses to certify the sustainability of its actions are the sector in which it operates, the fact of acquiring land in more than one African country, a weak business climate in the target country and the country from which it come from. Surprisingly, the European economic operators involved in acquisitions for biofuel crops show significantly lower probability of being certified. Main evidence from the study shows that also the structure of the partnership and the size of the land acquired seem not to affect the investor's choice to certify its action.

There are several reasons why existing biofuel certification schemes are not joint by many of the economic operators in the biofuels sector. First, the governance structure of these certifications is often led by large-scale agro industry and the cost structure of certification is cutting out smallholders [3]. Even if some feedstock roundtables are providing incentives for smallholders to meet the high certification costs, most of these schemes still tend to favor big companies able to meet them. These certification schemes should therefore look for a more balanced governance structure incentivizing active participation of smallholders' representatives [3].

A second factor is the ambiguity created by the multiple uses of some feedstocks (e.g. food, feed, fibre and fuel), while the EU sustainability requirements apply to only the biofuel use [5]. Therefore, an actor can produce a feedstock used for biofuels production in sustainable conditions, while it may produce the same crop used for other purposes after the conversion of a forest or grassland. In order to avoid land use change, double-standard policies should be avoided and the certification scheme should address feedstock supply chain in spite of the final use [5].

Finally, the effectiveness of the certification schemes can be reduced by their rising number. While it might create positive pro-competitive effects such as development in implementation and verification mechanisms, it could all the same generate confusion and inconsistency, hence reducing the confidence of consumers and final users ([3], p. 142).

A more general issue on the EU sustainability criteria for biofuel is its consistency with international trade rules. The unclear classification of biofuels for transport may generate difficulties for the introduction of incentives and tariffs linked to sustainability criteria. Economic, environmental and social restrictions need to comply with WTO conventions and country Most Favoured Nation obligations. Moreover, according to the GATT rules, domestically produced biofuels have to meet the same standards required for foreign producers, because it is not possible to distinguish between domestic and imported products [3]. For example, the German draft biofuels law proposed the exclusion of imported biofuels made by soybean oil and palm oil from subsidy programmes and mandates until the compliance with sustainability criteria was demonstrated. But Germany had to drop this proposal because of EU objections concerning WTO/GATT compatibility [41,42].

The European Union and the other actors aiming at reducing the negative aspects connected to land acquisitions should make further steps to ensure the participation of the investors in voluntary schemes, and their effectiveness.

As Zezza [15] points out, by delegating to certification schemes the EU encounters principal-agent problems. The efficiency of the EU delegation approach is jeopardized by agents' rent seeking behavior. Large asymmetries of information between the agent and the principal allow rent seeking by the agent, pursuing his own interests. The EU biofuel regulatory regime introduces a double delegation: one from the European Commission to the partners of the approved schemes; the other from these voluntary schemes to third party auditors [15]. In order to minimize these risks, the EU should enforce the monitoring on the voluntary schemes' governance and regulations, and these in turn should verify audits and provide mechanisms ensuring that members comply with commitments.

The European Union itself recognized that Directive 98/70/EC and Directive 2009/28/EC failed to ensure voluntary schemes compliance with sustainability criteria and transparency, since they do not contain any provisions concerning the recognition process of those voluntary schemes ([19], Amendment 23). In the regulations there is a lack of criteria that those schemes need to comply with in order to obtain recognition, which maximizes the risks from rent seeking behavior. Although certification may improve the biofuel sustainability performances at the production site, voluntary schemes are not likely to avoid other indirect effects, such as the impact on food security, food availability or indirect land use changes (ILUC). Therefore additional requirements are needed to address, for instance, GHG emissions, food security and food availability, increase of food prices and ILUC [5]. Moreover, specific measures to protect indigenous communities' land right need to be introduced to avoid the displacement of local and indigenous communities resulting from the use of land for growing biofuel feedstocks. Finally, the voluntary schemes should guarantee the environmental sustainability in the areas involved [19].

The Commission should therefore set stricter mandatory minimum sustainability requirements that the schemes must comply with in order to be approved. Moreover, the voluntary schemes must guarantee independence and reliability of audits and the involvement of local and indigenous communities in free prior and informed consent processes. In case of non-compliance of one member, the initiatives should have complaint mechanisms and

strict rules to force compliance or punish the malpractices by excluding them [19]. To minimize the risks from information asymmetry, the European Commission should have access to all relevant documents in order to monitor and enforce the effective operation of the schemes. In particular, the EU ('principal') can reduce the risks by analyzing independency, modality and frequency of audits; mechanisms identifying and dealing with non-compliance; scheme's transparency; stakeholders' involvement; rules on the accreditation, qualification and independence of auditors and relevant scheme bodies. The EU can require the voluntary schemes to adopt recognized standards and guidelines, such as those developed by the International Organization for Standardization.

Finally, even if they have some complaint mechanism, the voluntary schemes may fail to control the actions of their members. For instance, the Roundtable on Sustainable Palm Oil has often been blamed to be unable to preserve the rights of local population. In the case of *Biopalm Energy Limited*, a Company from Singapore which was claimed responsible of destruction of Bagyeli communities in Cameroon [43], the RSPO mechanism for complaint has been accused to be inappropriate by civil society and NGOs. Moreover, Farm Land Grab has accused the Roundtable's legal opinion to ignore core of the complaint against *Wilmar International's* subsidiary *Biase Plantation Limited* in Nigeria [44], and has claimed RSPO's inability to address root causes of the conflict related to *Sime Darby's* investment in Liberia [45].¹²

The double delegation process set by EU RED makes it difficult to monitor and verify compliance with the sustainability requirements both by the voluntary schemes and by the single economic operators. Therefore, joint efforts are needed to ensure the sustainability of the land investment. This paper has showed that the European Union by itself is still not able to guarantee compliance of the actors involved. First, the EU should ensure a stricter regulation and control on the biofuels market, to guarantee respect of economic, environmental and social standards, in order to avoid environmental risks and ensure food security and land-use rights. This cannot be done by Member States (MS) alone, but they can still establish incentivizing policies and mechanisms for the identification, authentication and quality control of biofuels. Complementary and harmonized policies at MS level can help preventing fraudulent or misleading claims about the origin of a biofuel feedstock, and avoid the multiple declarations of biofuels volumes under two or more national systems or international accreditation schemes ([19], Amendment 11).

On the other hand, the Countries targeted by the investment may also introduce in their legislation some regulation of the land acquisition procedures, and a strict monitoring of the investors behavior, also with the help of voluntary schemes and the EU. In fact, the Union may attempt to conclude bilateral or multilateral agreements with third countries containing requirements on compliance with sustainability criteria. Moreover, origin and target countries should address customs procedures which may lead to fraud related to the trade of biofuels.

But also financial and social actors have a role to play to ensure the sustainability of land investment. As Van Gelder with German [46] point out, for instance, responsible investment instruments applied by private financial institutions on a voluntary basis, as complementary to government actions, would be fundamental to ensure sustainability of the biofuels investments worldwide. In fact, by analyzing in details the financing of biofuel and related

feedstock in forest-rich countries of Asia, Africa and Latin American, they find out that large financiers are fundamental in sustaining the growing rate of investment in land for growing biofuels crops [46].¹³ Due diligence standards and greater transparency for financial investors would be positive to boost responsible investment. Our evidence has shown that financial actors directly involved in land acquisitions in Africa are in fact among the less prone to adopt sustainable behavior and CSR strategies.

Finally, we have seen that consumer and public scrutiny on the behavior of some economic operators has induced them to adopt more sustainable strategies. Therefore, consumers and society awareness is an important dowel to enhance both the adoption of responsible behavior and standard and certification systems by private investors and the introduction of sustainability requirements in public legislation. Being global in scale and involving many different actors, land acquisitions require an integrated system of checks and balances covering actions from private, financial, public and civil sector jointly.

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¹² The Government of Liberia conceded 220,000 ha of land to Sime Darby to plant oil palm and rubber, but the company performed an inadequate consultation process and compensation, which resulted in increasing opposition and complaint to the RSPO by the local population. Local resistance grew into violent acts causing the operations to be repeatedly disrupted and suspended [18].

¹³ Van Gelder with German [46] select 20 countries-feedstock pairs and look at the companies and their sources of finance, including Governments, entrepreneurs, banks and institutional investors and multilateral financial institutions. For what concerns Africa, they focus on jatropha and/or sugarcane in African dry forests (Ghana, Madagascar, Malawi, Mozambique, Tanzania and Zambia), and on oil palm in the Congo Basin (Cameroon, the Democratic Republic of the Congo and the Congo). For their twenty case studies, they research investments made by the 10 largest corporations in the period 2000–2009.

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