

# Governance Barriers to Renewable Energy in North Africa

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Solar power in the North African region has the potential to provide electricity for local energy needs and export to Europe. Nevertheless, despite the technical feasibility of solar energy projects, stakeholders still perceive projects in the region as risky because of existing governance issues. Certain areas of solar projects, such as construction, operation and management, are the most prone to governance risks, including lack of transparency and accountability, perceived as barriers for deployment of the projects. It is likely that large-scale foreign direct investment into solar energy will not eliminate existing risks, but might even increase them. Furthermore, the recent political changes in the region have addressed some governance risks but not all of them, especially bureaucratic corruption. Stakeholders recommend a broad set of measures to facilitate development of solar projects in the region, ranging from auditing of individual projects to simplification and unification of bureaucratic procedures.

**Keywords:** North African region, foreign direct investment, solar projects, governance risks, transparency and accountability,

Concerns about climate policy and fossil fuel scarcity are turning increased attention toward solar energy. The abundant solar resource in the deserts of North Africa can outweigh the 10–15 percent transmission losses between these areas and Europe, thus making solar plants in the region more economically feasible than the same kind of plants in southern Europe.

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Concentrating solar power (CSP) technology, which uses mirrors to focus sunlight to heat a transfer liquid and generate steam to power a turbine, has the most potentials in the North African region, largely because the heat can be stored for several hours prior to entering the steam turbine cycle, thus providing baseload power.<sup>1</sup> Several studies have demonstrated the technical feasibility of CSP deployment in the Sahara desert for local consumption and further export to Europe.<sup>2</sup> Algeria, Egypt and Morocco have already developed their first integrated solar combined cycle (ISCC) plants in the region, which supplement a regular natural gas generation facility with CSP technology<sup>3</sup> and the first 500 MW CSP power plant, without natural gas back up, is currently under construction in Morocco.

Photovoltaic (PV) power is currently far more popular than CSP, however, and for good reason: PV panel prices have been decreasing steadily and above expectations. The International Energy Agency (IEA) in its New Policies Scenario forecasts PV capacity additions of 553 GW by 2035, but only 81 GW of CSP.<sup>4</sup> While major commercial CSP plants have yet to be built on a larger scale, there is already a large installed base of PV generation, driven, in part, by generous previous or on-going subsidies in countries such as Germany. In North Africa, some schemes have been put forward to build large-scale PV plants in the desert. The Mediterranean Solar Plan (MSP), the flagship initiative of the Union for the Mediterranean, foresees 20GW of additional renewables in the region by 2020, with a mixture of PV, CSP and other renewables.<sup>5</sup> Since PV panels can be deployed decentrally, the technology complements a centralised CSP generation system quite well, and it seems likely that both technologies will be deployed alongside each other in North Africa. The deployment of solar power on a large scale in the region would be supported by the national governments of North African countries as they have recognised the potential of renewable energy sources (RES) and settled upon the deployment of RES as one of their priorities, which is reflected in the national targets.<sup>6</sup>

The exploitation of renewable energy sources in the North African region could also contribute to achieving climate policy targets in the European Union. The goals for 2020 include reducing greenhouse gas emissions from all primary sources by at

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<sup>1</sup>Pitz-Paal *et al.*, *Roadmap Document*, [http://www.vgb.org/data/vgborg\\_/Forschung/roadmap252.pdf](http://www.vgb.org/data/vgborg_/Forschung/roadmap252.pdf).

<sup>2</sup>Czisch, *Szenarien zur zukünftigen Stromversorgung*.

<sup>3</sup>Richter *et al.*, *Concentrating Solar Power Global*.

<sup>4</sup>International Energy Agency, *World Energy Outlook 2013*.

<sup>5</sup>Resources and Logistics, *Identification Mission*, [http://ec.europa.eu/energy/international/international\\_cooperation/doc/2010\\_01\\_solar\\_plan\\_report.pdf](http://ec.europa.eu/energy/international/international_cooperation/doc/2010_01_solar_plan_report.pdf).

<sup>6</sup>OME, *Mediterranean Energy Perspectives 2013*.

least 20 percent in comparison to 1990, increasing the share of renewable energy sources in final energy consumption by 20 percent, and improving energy efficiency by 20 percent.<sup>7</sup> The EU legislative and regulatory framework also provides an opportunity for trading renewable energy quotas among member states and gaining credit for electricity imported from renewable sources in countries outside the EU. Such physical imports of electricity from outside the EU would have to be accounted for with Guarantees of Origin (GOs), which make it possible to quantify imports from North Africa and use them towards renewable energy quotas.

There are several public and private initiatives for developing renewable energy projects in the Mediterranean region and establishing cooperation between the EU and North African countries. From the public policy side, the goal of the MSP is to create 20 GW of new power production capacity based mainly on solar and wind in the Mediterranean basin by 2020, as well as to contribute to RES technology transfer and the development of local industries. The plan foresees implementation of large-scale solar power plants with capacities up to 200 MW, as well as small commercial solar plants with capacities below 50 MW. From the private sector side, the Desertec Industrial Initiative (DII) was established by a consortium of German investors in 2009 on the basis of the Desertec concept.<sup>8</sup> Its target is to make €440 billion in investments in CSP in the North African region, largely for export to Europe. The long-term goal of DII is to satisfy about 15 percent of Europe's electricity demand by 2050 with solar and wind power imports from North Africa. However, there are currently doubts whether energy cooperation, involving all kinds of energy sources, from gas to alternative energies, between the European Union and the North African region is still feasible as governance risks, such as accountability and transparency, question the economic profitability of investment.

In 2010, the North African region was seen as one of the least attractive for foreign direct investment (FDI), just slightly better than sub-Saharan Africa, mainly because of existing governance risks.<sup>9</sup> However in 2011, the popular uprisings changed the political situation in Tunisia, Egypt and Libya. There were also large protests in Morocco.<sup>10</sup> To describe the political change in the region, some media commentators portrayed the Arab spring at the time as the "end of a long tunnel of hopelessness".<sup>11</sup> In the West, the Arab spring is now mainly seen as a series of domestic developments that have affected different countries of the region to different extents and in different ways, but a common denominator of all of them is

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<sup>7</sup>Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF>.

<sup>8</sup>Desertec, *Our Vision of the Union for the Mediterranean*.

<sup>9</sup>UN, *World Investment Prospects Survey 2010-2012*.

<sup>10</sup>Goodwin, "Why we were Surprised", 452-6.

<sup>11</sup>Fathallah, *Development Models*.

that the new governments, although trying to undertake institutional change, are still grappling with the serious economic difficulties that triggered them in the first place.<sup>12</sup> It seems that, while political change came about quickly, changing certain governance problems in the region is probably going to take an entire generation.

Now, two years after the Arab uprisings, according to the survey conducted by UNCTAD for the period 2013–15, only 6.3 percent of all surveyed investors indicated North Africa as being attractive for investment, compared to 11 percent for Sub-Saharan Africa and 64 percent for East Asia. Private investors have, nevertheless, increased their activities in the region in recent years with volumes of FDI also rising.<sup>13</sup> However, most of this investment is bound for the extraction of natural resources and not for the development of medium- and long-term technology industries like CSP and PV. This may be due to the fact that investors still see North Africa as too risky for investment in large-scale projects for renewable energies deployment.<sup>14</sup>

In light of previous studies, the need for the further deployment of solar energy, and the current situation for FDI in the region, two research questions were identified:

- What areas of solar construction and project management cycles are perceived by European and North African stakeholders as the most problematic and prone to governance risks?
- How do stakeholders perceive the impact of governance risks on large-scale FDI in solar projects in the region and have recent political changes, resulting from the Arab spring, changed these perceptions?

### **The most common governance risks**

Governance risks are taken to mean manifestations of poor governance, such as corruption and a lack of accountability and transparency, that deny the right of equal treatment. Corruption, including favouritism and nepotism, can be subdivided into three main types. The first is bribery, which is understood as the offer of gifts, loans, fees or other advantages for actions that are illegal,<sup>15</sup> and solicitation when businesses are forced to give bribes.<sup>16</sup> The second is a “facilitating”, “speed-up” or “grease” payment, given to secure or speed up the bureaucratic routine. The third type is grand corruption, which happens at high levels of government during government procurement.<sup>17</sup>

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<sup>12</sup>Khatib, “Oil and Natural Gas Prospects”.

<sup>13</sup>UN, *World Investment Prospects Survey 2013-2015*.

<sup>14</sup>Komendantova *et al.*, *Perception of Political Risks*, 103-9.

<sup>15</sup>Nelson, *Reforming Wildlife Governance*.

<sup>16</sup>Organization for Economic Cooperation and Development, *Morocco 2010*.

<sup>17</sup>UN, *World Investment Report 2008*.

The literature reveals different attitudes toward governance risks, in general, and corruption, in particular. Indeed, some economists consider corruption a means to speed up the economy and business, especially where there are excessive bureaucratic regulations and market restrictions.<sup>18</sup> Some scholars even argue that in extreme cases, corruption is essential for keeping an economy going<sup>19</sup> and that it can be a helpful instrument for re-establishing market efficiency.<sup>20</sup> Corruption can be seen as a means to speed up the regulatory process and to open up new contractual possibilities.<sup>21</sup> But the expectation of speed-up money can also lead to a moral hazard, whereby bureaucrats create artificial delays in order to then collect money to remove the delays. In such situations, bureaucrats act like monopolists by creating scarcity and then profiting from increasing prices.<sup>22</sup>

Governance risks rank fourth on the list of the most problematic factors for doing business,<sup>23</sup> and good governance is seen as crucial for the creation of an attractive business environment and investment climate in any country.<sup>24</sup> Administrative barriers often increase risks for investors and hinder the deployment of new technologies connected with a high degree of uncertainty over future development, such as large-scale infrastructure projects.<sup>25</sup> Thus, the perceived risks associated with bureaucratic procedures in certain regions make deployment of renewable energy more expensive, as investors require higher risk premiums for invested capital.<sup>26</sup>

To date, there have been several independent scientific studies on the topic of governance risks in the natural resources management and energy sector. Most of them have studied governance risks in the oil sector, focusing on resource-rich and oil-rich countries in general,<sup>27</sup> and the effects of oil-related corruption of particular kinds of regulation.<sup>28</sup> On the sustainable development side, there have been some studies on governance risks relating to various kinds of resources: forestry,<sup>29</sup> water,<sup>30</sup> fisheries,<sup>31</sup> and wildlife.<sup>32</sup> But almost no work has been done, to our

<sup>18</sup>Bayley, "Corruption in a Developing Nation", 719-32.

<sup>19</sup>Morgan, *How Multinational Investors Evade Laws*.

<sup>20</sup>Mankiw, *Principles of Economics*.

<sup>21</sup>Ades and Di Tella, "Rents, Competition, and Corruption".

<sup>22</sup>Rose-Ackerman, *Corruption – A Study in Political Economy*.

<sup>23</sup>World Economic Forum, *Executive Opinion Survey*. Three other studies were produced by the World Bank Group.

<sup>24</sup>International Chamber of Commerce, *Resisting Extortion and Solicitation*.

<sup>25</sup>Komendantova and Patt, "Corruption: A Barrier to Renewable Energy?".

<sup>26</sup>Komendantova et al. "Solar Power Investment".

<sup>27</sup>Kolstad and Wiig, "Transparency in Oil-rich Countries"; Gillies, *Reforming Corruption out of Nigerian Oil?*

<sup>28</sup>Al-Kasim et al., *Corruption and Reduced Oil Production*, 137–47.

<sup>29</sup>Soreide and Williams, *Corruption, Grabbing and Development*.

<sup>30</sup>Gonzalez de Asis et al., *Improving Transparency, Accountability and Integrity*.

<sup>31</sup>Kolstad and Wiig, *Natural Resources, Corruption and Trust*, 25.

<sup>32</sup>Nelson, *Reforming Wildlife Governance*.

knowledge, on the drivers and effects of governance risks in general, and corruption in particular, in the growing renewable energy sector.

The scientific literature does show that large-scale solar projects in the North African region could become subject to governance risks because of the specifics of the sector, the size of the projects and the type of activity. First, the construction sector is ranked globally as one of the most vulnerable sectors for corruption.<sup>33</sup> The review of existing construction projects worldwide shows that the size of bribes in construction projects varies, but on average can amount to up to 7 percent of government contract value. This is paid as a reward for winning the project.<sup>34</sup> Second, large-scale infrastructure projects are also subject to risks of grand corruption, when a relatively small number of individuals have access to large amounts of money and the possibility of abusing discretionary power. Large-scale projects, due to their size alone, offer potentially bigger rents for corrupt politicians, senior officials and high-level technical staff.<sup>35</sup> This may be why national governments sometimes prefer large and expensive infrastructure investments to smaller decentralised technologies. In addition, large-scale infrastructure projects often involve complex, international issues calling for financiers, consultants and contractors. This increases the potential for non-transparency and trans-border corruption. The encounter between different legal systems and business practices, which is typical for transnational projects, also creates windows of opportunity for non-transparent practices. Third, the corruption risk is especially acute in activities with a high level of procurement of goods and services from the private sector. Thus, this sector is particularly vulnerable given that the volumes of investment necessary to deploy solar capacities on such a large scale make it unrealistic to think that all necessary financing can come from public institutions alone. The risk of corruption exists during contracting-out, concessions and privatisation in the context of inadequate regulations.<sup>36</sup> In this case, corruption not only increases the price of infrastructure but also reduces the economic returns on infrastructure investment.<sup>37</sup>

Furthermore, several studies have been conducted on barriers and risks for FDI at different levels: at a global scale, for transitioning and developing economies in general, and for the North African region in particular. The surveys of the United Nations Commission for Trade and Development identify risks for FDI in general and globally. They show that stakeholders perceive war, conflict and political instability as very important risks (43 percent of all respondents), followed by such risks as threats to personal and business safety (32 percent), volatility of prices for

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<sup>33</sup>Transparency International Climate Governance Workshop, "Mapping Governance Risks, Stakeholder Interventions, and Future Actions", Berlin, 12–14 June 2010.

<sup>34</sup>Kenny, *Construction, Corruption and Developing Countries*.

<sup>35</sup>Gonzalez de Asis *et al.*, *Improving Transparency, Accountability and Integrity*.

<sup>36</sup>Hall, "Privatization, Multinationals and Corruption".

<sup>37</sup>Kenny, *Infrastructure Governance and Corruption*.

petroleum and raw materials (21 percent), financial instability and global economic downturn (18 percent), and changes in the investment regime (15 percent).<sup>38</sup>

One study focusing on developing and transition economies identified three types of risks of concern to FDI stakeholders. The first is connected with the effects of state monopoly, the second with the lack of a stable legal framework and the third with bad corporate and public governance, including corruption and inappropriate bureaucratic procedures.<sup>39</sup>

Another study focused explicitly on the North African region and found that FDI stakeholders active in the region perceived political and regulatory risks in the region as most important (76 percent), followed by financial (63 percent), cultural (40 percent) and natural risks (16 percent).<sup>40</sup> Additionally, three kinds of assessments of regulatory risks in the North African region are conducted regularly by the World Bank. The first looks at the quality and accountability of government and identifies high risks in these areas in the region.<sup>41</sup> The second survey evaluates the investment climate and points to significant regulatory problems across the region.<sup>42</sup> The third surveys companies involved in FDI in the region and shows that corruption is perceived as the most significant problem (identified by 64 percent of all surveyed companies in Algeria and 60 percent in Egypt), followed by high taxes (55 percent in Morocco and 50 percent in Egypt) and complicated regulations (34 percent in Egypt and 30 percent in Algeria).<sup>43</sup>

Research conducted by Komendantova, Patt and Williges prior to this study looked at perceptions of risks and barriers for investment into one particular solar technology, CSP, in the North African region.<sup>44</sup> It found that 52 percent of all stakeholders perceived complexity and corruption of bureaucratic procedures as a barrier, 45 percent the instability of national regulations, 37 percent the absence of guarantees, 35 percent the low level of political stability and 25 percent the lack of support from local government. In a second survey, Komendantova, Barras and Battaglini asked stakeholders to identify the most serious and most likely risks for FDI in CSP from a list of nine risks: regulatory, political, revenue, technical, force majeure, financial, construction, operating and environmental. The stakeholders perceived regulatory risks, such as inappropriate bureaucratic procedures and corruption, as the most serious for investment into CSP projects in the North African region (79 percent). Two other risks were considered serious: political risk

<sup>38</sup>These figures are taken from UN, *World Investment Report*, annual reports.

<sup>39</sup>Bleyzer Foundation, *Completing the Economic Transition*.

<sup>40</sup>Al Khattab *et al.*, "The Institutionalization of Political Risk Assessment".

<sup>41</sup>World Bank, "Doing Business 2014, country profiles for Algeria, Egypt, Morocco and Tunisia", <http://www.doingbusiness.org/reports/global-reports/doing-business-2014>.

<sup>42</sup>World Bank, "Worldwide Governance Indicators, 1996–2012", <http://data.worldbank.org/data-catalog/worldwide-governance-indicators>.

<sup>43</sup>World Bank, "Enterprise Surveys", <http://www.enterprisesurveys.org/data>.

<sup>44</sup>Komendantova *et al.*, "Solar Power Investment in North Africa".



(32 percent) and force majeure (12 percent), but only the regulatory risks were perceived as very likely to happen by 67 percent of all stakeholders.<sup>45</sup>

### **Stakeholders' perceptions**

As governance risks are difficult to quantify, qualitative estimates are the only viable source of data. There are several methods for analysing governance risks in general and corruption risks in particular. A common one is stakeholder dialogue, which makes it possible to record the perceptions of relevant stakeholders with the help of surveys, interviews and workshops. It also permits cross-country comparisons and monitoring of corruption risks over time. This is the method most frequently used to measure corruption risks in developing and transition economies.<sup>46</sup>

There are two prominent examples of the application of this method. One is the Corruption Perceptions Index, developed by Transparency International in the 1990s. The index is typically used to assess misuse of public offices for private gains and to conduct cross-national comparisons of corruption. It is "a composite index, drawing on 14 different polls and surveys from seven independent institutions carried out among business people and country analysts, including surveys of residents, both local and expatriate".<sup>47</sup> The Corruption Perceptions Index has been shown to have significant policy importance as it provides estimations of quality of governance, draws attention to places where national policy action is necessary and allows inter-country comparisons.<sup>48</sup> The second index, the Enterprise Surveys, has been developed by the World Bank. It aggregates information from surveys and weighs each according to its presumed reliability. The weighting procedure is based on the premise that surveys whose values correlate better with others for the same country are of higher quality.<sup>49</sup>

Using the same methods as Transparency International and the World Bank, in this study attention was concentrated primarily on the perceptions of governance risks, such as corruption.<sup>50</sup> These perceptions are crucial in that, by indicating the most problematic areas, they influence the decisions taken by stakeholders. If investors perceive a project as risky due to governance issues, they will have to factor in a higher risk premium or may even decide not to invest at all.

Luckily, research started before the political changes in the North African region and continued and ended after the Arab spring. The first time stakeholders were

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<sup>45</sup>Komendantova *et al.*, "Perception of Political Risks".

<sup>46</sup>Kaufmann *et al.*, *Measuring Corruption: Myths and Realities*.

<sup>47</sup>Transparency International, Corruption Perception Index 2013.

<sup>48</sup>Golden and Picci, "Proposal for a New Measure of Corruption".

<sup>49</sup><http://www.enterprisesurveys.org/data>; Kaufmann *et al.*, *Governance Matters IV*.

<sup>50</sup>The auditing of individual projects to identify if and where real corruption takes place is a separate issue for further research.



approached in June 2010, they were reluctant to speak about corruption in their country out of fear of the secret police. As political change came about, however, their answers became more forthcoming.

The method of stakeholder dialogue includes several mechanisms of information collection, such as face-to-face and telephone interviews, mail and hand delivered surveys, and electronic data reporting. During the face-to-face and telephone interviews, an interviewer visits or calls people to collect data. The advantages of this method are high response rates and often better quality data. During the main survey, questionnaires are mailed to respondents to be sent back with answers. Even though this method can reach many people quickly, it has a lower response rate than other data collection methods. The method of electronic reporting gives respondents the option to answer electronically via an Internet website. This method is flexible and convenient, but cannot guarantee confidentiality, privacy or data quality.

To compensate for the diverse shortcomings of the various methods, different methods were used. For empirical results, qualitative expert interviews and on-line questionnaires were used, the latter sent out to a number of select experts or practitioners active in the area of solar projects. Face-to-face interviews were carried out during workshops in Summer 2010.<sup>51</sup> Thereafter, stakeholders were contacted via telephone. In parallel, those stakeholders who could not be contacted by phone were sent an online questionnaire. This research was conducted between May 2010 and December 2013.

The total number of respondents was 42, all of whom were directly or indirectly involved in solar projects. About 30 percent of all stakeholders were from NGOs, 27 percent from academia, 18 percent from the private sector, 10 percent from the civil service and 10 percent from international organisations. Most stakeholders were from Europe or the United States, with the remainder from the North African region. Although the sample size was small, it was considered sufficient to generate reliable results because it involved various groups of stakeholders operating in a very narrow area of solar projects. Indeed, it would have been difficult to achieve a larger sample given the specific and limited size of the group of possible respondents. Data reflected different positions, not only those of private companies.

### **Governance risks and how to tackle them**

First, interviewees were asked to judge the barriers that stand in the way of FDI in solar projects in North Africa. They were asked to divide 100 percentage points between the various barriers – legislation (poor legislation and lack of incentives),

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<sup>51</sup>During a workshop on solar development in the region in Hammamet, Tunisia, organised by IIASA in cooperation with WWF, June 2010, and a corruption-focused workshop organised in Berlin by Transparency International, 14–16 June 2010.

bureaucracy (including complexity and time needed), and corruption (including unpredictability of material resources needed) – with the most important receiving the most points. The results showed that bureaucracy was perceived as the greatest barrier by 46 percent of all respondents, followed by legislation (33 percent) and corruption (20 percent) (Figure 1). All three barriers were perceived as important, but corruption did not explicitly stand out. The differences between the barriers were not significant given the size of the sample.

Second, respondents were asked to estimate future dynamics of corruption, also taking into account the influx of large-scale FDI in solar projects in the region. The results were homogenous. Almost 60 percent of all respondents thought that large-scale investments in solar projects in the North African region were likely to increase the existing level of corruption. Only 5 percent of all interviewees thought that it would have a diminishing effect on corruption. However, 35 percent indicated that they saw no direct link between the existing level of corruption and FDI, and did not think that the large-scale FDI in solar projects in the region would influence the existing level of corruption. Thus while, on the one hand, respondents did not see corruption as the most important issue right now, on the other hand, they perceived that foreseen investments in solar projects could increase the problem of corruption in the future.

Third, stakeholders were asked to identify those phases of a typical solar project cycle most prone to corruption risks. The permit phase was considered by the largest number of stakeholders as the most prone to corruption. The construction and approval of completed projects was also seen as prone to corruption risks, but not as much as the permit phase. The operating and management phases were generally perceived as least prone to corruption risks (Figure 2).

Fourth, stakeholders were presented with a list of possible corruption risks connected with investment in solar projects and asked to identify at least three types of risks which might be relevant for solar power in North Africa. Stakeholders could name more than three types of risks if they thought that more were relevant. The results showed that stakeholders perceived all the risks as relevant: the risk of unauthorized sale of public property and licenses was named by all stakeholders (100 percent), followed by the risk of illegal transactions (88 percent), manipulation of regulations, purchases and supplies (82 percent), expectations of money and gifts by officials (82 percent), selective permission of tax evasion (71 percent), misuse of inside knowledge and confidential information (71 percent), links with organised crime and black market operations (71 percent), abuse of justice and non-performance of duties (65 percent), falsification of records (65 percent) and illegal surveillance (65 percent). However, even though stakeholders perceived all these risks as relevant for solar projects, they perceived them to be of varying importance as a threat to investment and a barrier for deployment of solar power.

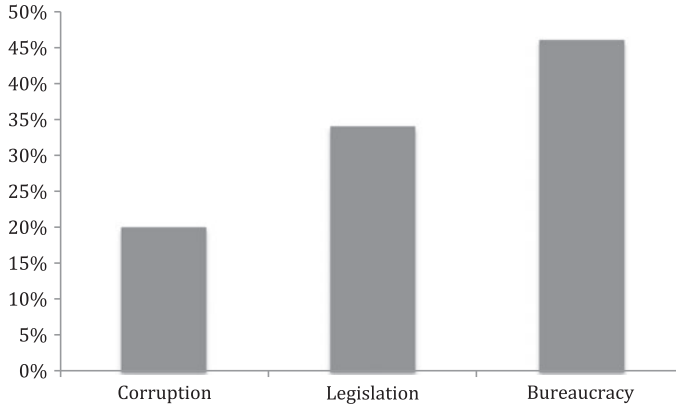


FIGURE 1. Perceptions of barriers for CSP projects in the North African region (n = 42).

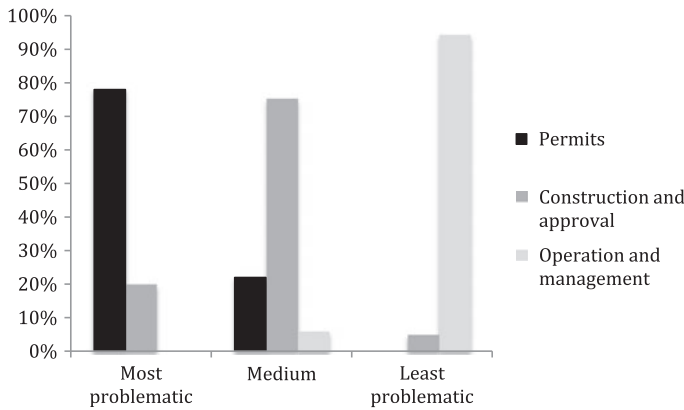


FIGURE 2. Perceptions of the most problematic areas in a typical solar project cycle (n = 42).

Fifth, therefore, stakeholders were asked to estimate the importance of a particular risk for solar projects, as well as the likelihood of it occurring. Each risk could be rated as very important, somewhat important, and not important, as well as very likely, somewhat likely, and not likely. Figure 3 shows the risks sorted by their perceived likelihood. This was necessary to find out whether stakeholders perceived some risks as being serious, if they were to happen, but that the probability of them happening was perceived as low. The aggregated values in Figure 3 are combined from the percentage of respondents marking a risk “very likely/important” and half the percentage of respondents marking a risk “somewhat likely/important”, scaled to the number of respondents per risk, which ranges from 12 to 17. This methodology allowed us to identify the risks that were perceived as serious and likely to happen. The four most likely risks are expectation of money, misuse of inside knowledge, manipulation of regulations/contracts/loans and the unauthorized

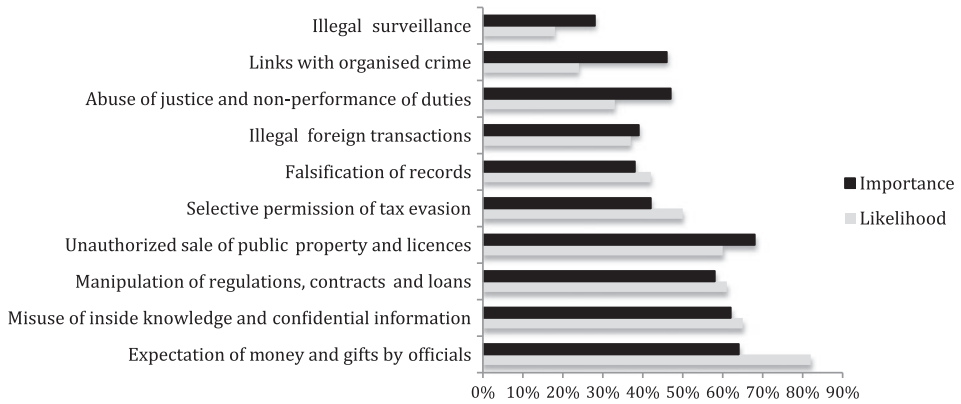


FIGURE 3. Perceived importance of risks (n = 42).

sale of public property and licenses. All of these were also rated as fairly important for solar projects. Although the unauthorized sale of public property was deemed the most important for solar power, it was seen as less likely to occur than the other top three risks. Organised crime and illegal surveillance in particular were seen as unlikely, despite being considered somewhat important.

This result matched closely with what was expected for large-scale construction projects such as solar energy projects.

Sixth and finally, the respondents were asked to provide recommendations for tackling these risks. The recommendations were divided into three groups. The first group contained recommendations targeting complicated bureaucratic procedures and corruption, such as “the fewer bureaucratic hurdles the program has, the fewer opportunities for corruption in a country” and “less bureaucracy for more transparency”. Generally, tender programs were perceived as more prone to corruption risks than standardised procurement procedures.

The second group of recommendations touched on the broader area of national welfare, distribution of income and corruption. Stakeholders recommended policy reforms to create broad welfare and flat income distribution, as well as an environment in which corruption becomes riskier. For example, small-scale corruption by minor officials could be counteracted with low cost rental housing with the threat of losing tenancy. The broader recommendations involved stimulation of economic development in the country. Some people even mentioned examples of some developed industrialised countries that had had a reputation for being very corrupt in the 19th century, but where economic development had helped dramatically to reduce the problem.

The third type of recommendations was connected with improved auditing of individual solar projects. This also included in-depth verification and insurance

programs. The application of stricter lending standards, which currently exist for the projects of international institutions and banks, was also recommended.

As this research involved stakeholders who deal with solar power, the results are considered typical for solar projects, in accordance with the experience and perceptions of stakeholders. However, the risks identified are considered to be relevant to other renewable energy projects as well, even though more work will be needed to generalise these results.

## Conclusions

The results of the analysis of stakeholder perceptions of governance risks for solar projects in the Mediterranean, and especially, North African region, make it possible to draw three conclusions. First, governance risks, such as corruption, are perceived as being most likely during the permit phase of a project. Second, all types of corruption risks are judged relevant to some extent, but four stand out as particularly likely and important. They are expectation of money, misuse of inside knowledge, manipulation of regulations, contracts and loans, and, finally, the unauthorized sale of public property and licenses. Third, it seems that the Arab spring has had an influence on such corruption risks as grand corruption, connected with the ruling party. However, it has not changed regulations and therefore has not addressed the risks typical for bureaucratic corruption.<sup>52</sup>

The stakeholders indicated the areas and types of corruption risks they thought would be most likely to increase with large-scale deployment of solar power in the region. The most relevant phase for solar projects was found to be the permit phase, which is prone to such risks as manipulation of regulations, purchases and supplies; expectation of money and gifts by officials; misuse of inside knowledge and information; and selective permission of tax evasion.

This is in keeping with the results that show that 'bureaucratic corruption' is a bigger problem in the region for investment in solar projects than 'grand corruption': 33 percent of all stakeholders mentioned bureaucratic corruption as a significant barrier to investment, whereas 'grand corruption' was mentioned by only 20 percent. And while grand corruption may decrease as a result of recent political changes resulting from the Arab spring, it is uncertain whether 'grey' bureaucratic corruption will be diminished by them. For example, according to the Corruption Perceptions Index, which measures overall corruption, in 2011, Tunisia ranked 73rd, Morocco 80th and Egypt 112th.<sup>53</sup> But during the last two years the

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<sup>52</sup>As the Ease of Doing Business Index and the Corruption Perception Index show, the positions of several countries in the region have worsened since the Arab spring.

<sup>53</sup>Transparency International, Corruption Perception Index 2011, <http://www.transparency.org/cpi2011>.

situation has actually worsened, with Tunisia ranking 77th, Morocco 91st and Egypt 114th in 2013.<sup>54</sup>

The impact of the Arab spring on regulations has been different across the region. The Ease of Doing Business index measures how favourable regulations for doing business are. The regulations considered are regulations for starting businesses and for closing them, dealing with construction permits, registering property, protecting investors. As the index is developed for different periods of time, including before and after the Arab spring in the region, it also provides an indicator of change in regulations by comparing the ranking of countries for different years. In Algeria it showed that the overall index worsened after the Arab spring (from 132nd to 148th) The index on dealing with construction permits worsened similarly (from 112th to 118th). Tunisia, on the other hand, improved its position on the overall index (from 73rd to 46th).

Since most stakeholders judged bureaucratic and legislative barriers as the most important factors holding back investment in potential solar projects, solving corruption problems would not appear to be a prerequisite for large-scale investment. However, if the perception that large-scale investments will increase corruption is accurate, making it an even greater hurdle than legislation and bureaucracy, one can argue that large-scale FDI should go hand-in-hand with specific programs targeting corruption and/or that specific anti-corruption provisions should be built into investment plans and large-scale solar development plans.

The international community and North African governments should therefore make every effort to tackle the existing level of corruption in the region. No homogenous recommendations were received from stakeholders as to how to go about this, however, it looks like action should be taken in all three major areas. Improvement and simplification of bureaucratic procedures is one avenue. More generally, general economic development and the creation of an environment in which corruption becomes risky for officials is another possibility. Improving auditing and verification of individual projects is a third possibility.

In general, people in the North African region are optimistic that things will change for the better.<sup>55</sup> However, the changes in institutional structure required to address bureaucratic corruption might take much longer than political changes. The new leaders are trying to establish new institutions, but it is still uncertain if they will succeed and if officials will become more reluctant to exploit and abuse their positions.

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<sup>54</sup>Transparency International, Corruption Perception Index 2013, <http://cpi.transparency.org/cpi2013/>.

<sup>55</sup>Dajani, "The Arab Spring Offers Hope".

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