



## Corruption risks in research funding in developing countries

### Query

Please provide a summary of corruption risks that are particular to research funding and research organisations as well as possible mitigating measures, with a focus on the healthcare sector.

### Purpose

We are considering providing financial support to a research organisation working in the healthcare sector in a developing country.

### Content

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### Summary

Funding research organisations in low-income countries can have a significant positive effect on the economic and political development of these countries. However, donors considering providing financial support to such organisations will need to consider both background integrity issues, such as the potential for conflict of interest or undue influence over research processes, as well as particular vulnerabilities to forms of corruption such as fraud and embezzlement.

The literature identifies potential mitigation strategies to counter the risk of corruption in research, such as codes of conduct, accountability and transparency mechanisms, and the implementation of risk management systems.

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*U4 is a web-based resource centre for development practitioners who wish to effectively address corruption challenges in their work. Expert Answers are produced by the U4 Helpdesk – operated by Transparency International – as quick responses to operational and policy questions from U4 Partner Agency staff.*

## 1. Background

An increasing share of development aid is geared towards fostering research and innovation capacities in developing countries (Aubert 2005; OECD 2012). Like other forms of development aid, donor financial support to research bodies is not immune from fraud and corruption – practices which have been cited as major impediments to the effectiveness of development aid (Kenny 2007) and are widely acknowledged as constituting a major efficiency cost to developing countries' economies (Olken & Pande 2012; Rose-Ackerman 1996).

Indeed, the existing literature indicates that corruption in research is doubly pernicious: not only does it divert resources intended for the public good into private pockets, it also hampers scientific advances, technological innovations and social scientific insights, and thereby stymies developing countries' future potential.

As research and development (R&D) often involves substantial financial investment with limited oversight from financial backers, state regulators or even ethics bodies, the incentives and opportunities for corruption can be high. Especially in research programmes in technical and highly-specialised fields with complex organisational structures, such as cutting-edge medical research, the sophisticated nature of the equipment and expertise needed can increase the potential for corruption (Trapnell et al. 2017: 38).

For example, procurement processes for highly-specialised equipment may only involve a limited number of bidders leading to a higher risk of collusion, or the complexity of the topics may make it easier to hide fake expenses as there are only a few who understand the research and its requirements. These risks may be amplified in circumstances where research organisations operate in areas with weak financial governance and a lack of transparency and accountability.

Studying existing literature on corruption in the healthcare sector, Vian (2007: 86) has identified a number of factors that foster corruption in health organisations, including those conducting medical research. She argues that the characteristics of the health sector, such as large amounts of discretion, lack of transparency and accountability, and a monopolistic structure, make medical research more prone to corruption.

Various characteristics of development aid may also exacerbate corruption risks, such as where

donor project managers are charged with disbursing large amounts of funds in a short space of time, which can mean that project expenditures are not adequately monitored (Semrau, Scott & Vian 2008: 2).

As discussed below in section two, externally funded research programmes may encounter integrity issues which can compromise the credibility of their findings. These integrity risks also provide incentives for the more explicitly corrupt acts, ranging from misreporting of expenses to systematic embezzlement and theft. As section three outlines, common strategies to counter such risks are the use of risk assessment and management systems, codes of conduct and accountability and transparency mechanisms.

### Research challenges in low-income countries

Research in developing countries often faces a double dilemma: on one hand, research funding is generally extremely scarce domestically, while at the same time the cost of conducting research can be disproportionately high as scientists in low-income countries often face additional challenges such as unfair pricing for research materials. Van Helden (2012) found that researchers in South Africa pay up to five times the price for research equipment and consumables (such as chemicals, biological agents, beakers and pipettes) than their counterparts in the USA or Europe.

The same study also showed that the quality of the delivered research equipment is frequently reported as subpar, and science and technology firms are suspected of "dumping" faulty batches of these goods on developing countries.

A third problem van Helden (2012) identifies is that research agreements between grant givers from developed countries and research organisations in developing countries often do not allow for sufficient overhead costs to support the establishment of integrity measures, such as ethics commissions or higher standards in accounting practices. Given that many transactions needed to conduct research in the field are likely to be "cash-based and vulnerable to theft", this lack of adequate oversight can be a real frailty (Semrau, Scott & Vian 2008: 2).

Another concern specific to the healthcare and pharmaceutical sector is that medical research may exploit patients involved in clinical trials in low-income countries; in a situation in which

access to healthcare is scarce, critics allege that patients in developing countries are not in a position to give genuine consent as turning down participation in a trial is the equivalent of refusing treatment (Petkov and Cohen 2016).

The inequities and obstacles of conducting research in low-income countries described above, such as unfair pricing, disproportionately low wages and unethical practices, can contribute to an atmosphere in which opportunities and incentives for corruption are rife.

For research organisations in developing countries, the background level of corruption can also have serious implications when publishing research and applying for further funding. Egharevba and Atkinson (2016) found that one of the reasons there are so few clinical trials conducted in sub-Saharan Africa is that pharmaceutical companies fear corruption and unethical behaviour and, crucially, researchers are less likely to conduct clinical trials in developing countries as they fear being perceived as corrupt and/or unethical. While more detailed research in this area would be needed, this indicates that research conducted in highly corrupt contexts may be perceived as tainted, even if the research itself was conducted in line with the highest integrity standards. Transparency in the origin, purpose and disbursement of research funding may help to ensure that independent research findings are not only valid, but also that they are perceived as credible by the wider scientific community.

## 2. Corruption risks in research funding

### Integrity risks: rigged research and undue influence

Externally funded research can encounter multiple integrity risks. Particularly where public and/or private funders have a stake in the research findings, they may seek to exert undue influence over the research process. While there is a small body of evidence on government funding biasing research (Brooks 2013), the increasing trend towards industrial sponsorship of universities and independent research entities raises broader concerns over how conflicts of interest may distort or corrupt scientific research (Robinson 2013).

Broadly speaking, it has been observed that industry-sponsored research tends to draw pro-

industry conclusions (Stelfox et al. 1998). Such practices can have potentially serious implications on the “weight of evidence” in any given field, as conflicts of interest can lead researchers to underreport negative findings or select a research design intended to show a product in the best possible light. In the healthcare sector, this is particularly egregious as the resultant findings may form the basis of diagnosis and treatment, to the potential detriment of patients (Petkov and Cohen 2016).

### Biased research design

Research sponsors may seek to manipulate research designs and protocols; changing sample sizes or control groups to yield the desired outcomes (The Union of Concerned Scientists 2012: 15). The healthcare and pharmaceutical sector is especially vulnerable to such practices as pharmaceutical companies fund the bulk of research on medications and typically have inadequate policies regulating the R&D process (Lexchin 2012). These companies often fund researchers at so-called contract research organisations to design, conduct and report on clinical trials testing new products (Petkov and Cohen 2016). Such arrangements have a high potential for conflicts of interest as the companies have a stake in the positive outcome of trials while the contracted researchers have an interest in getting further work assignments from these firms (Petkov and Cohen 2016).

Moreover, the characteristics of biomedical R&D, such as its high input costs and chance of failure, mean that pharmaceutical companies generally consider the potential to recoup their costs when commissioning research and are unlikely to prioritise ethical behaviour over profits (Transparency International UK 2016). It is perhaps not surprising, therefore, that evidence from the sector suggests that some researchers funded by pharmaceutical firms have been known to design or conduct trials in such a way as to produce misleading findings that will support a particular product (Kassirer 2006; Robinson 2013; Petkov and Cohen 2016).

### Misleading presentation of findings

Revealingly, one study showed that while 94% of industry-funded randomised control trials of antidepressants were framed to present the drugs in a positive light, analysis of the same trials by independent regulators found only 51% produced positive results (Transparency International UK 2016). In another notorious case, a report by the US Food and Drug Administration, funded by Dow Chemicals and other firms, stated that Bisphenol

A was safe, ignoring dozens of reports by independent scientists that it had caused harm (Sass 2008). Critics also point to close links between industry and regulators, noting, for example, that several complaints have been filed against the US Center for Disease Control, alleging that the federal agency is being influenced by corporate and political interests (Bachai 2016).

Research sponsors may attempt to terminate, suppress or discredit research unfavourable to their interests, either by threatening to terminate funding, or by intimidating, coercing or paying-off researchers (The Union of Concerned Scientists 2012: 13).

A prominent example is [research on the harmful effects of tobacco](#) products, which for decades was controlled by the tobacco industry. By funding research that cast doubt on the health risks of cigarettes and suppressing the research that contradicted this position, the tobacco industry was able to manipulate the overall body of evidence, as well as the dissemination of results to policy-makers (Bero 2012).

Finally, an increasingly common practice used by firms to promote the efficacy of their product is academic ghost writing in which academic articles are supposedly authored by researchers but are de facto written up by professional agencies who are contracted to promote the product. In the healthcare sector, clinical trials and therapeutic medicine have been found to be most prone to ghost writing (Lexchin 2012; Robinson 2013; Transparency International UK 2016).

### **Ethical issues in medical trials**

Medical trials, especially in developing countries, may also give rise to ethical concerns and issues of transparency. One of the cornerstones of medical trials is the informed consent of participants and failure to secure informed consent in medical trials may be regarded as an issue of torture, cruel, inhuman and degrading treatment under the International Covenant on Civil and political Rights (Bio Ethics Archive n.d.). Yet especially in countries with limited access to healthcare, securing truly informed consent can be problematic, as “turning down clinical trial participation is the equivalent of turning down treatment” (Petkov and Cohen, 2016, p.10). Hence, [voluntary informed consent](#) needs to take into account cultural factors and belief systems and be modified accordingly without compromising on the essential ethical standard of

informed consent (Bio Ethics Archive n.d.). A recent study of HIV clinical trials in Uganda found that simply obtaining a participant’s signature or thumbprint on a consent form did not necessarily ensure that they were fully informed about the trial, or had understood all of the information shared with them (Ssali, Poland and Seeley 2016).

Dissemination of trials and studies also gives room for misconduct, where studies are not published (in a timely manner) to hide negative findings or allow for an incorrect presentation of results (Petkov and Cohen, 2016). Therefore, there has been [a push to ensure more transparency](#) in the publication of trial results (Bruckner 2017).

### **Bribery in approvals, grants and subsidies processes**

Gaining access to research sites or data can also be a source of corruption. In some developing countries, government authorisation is required to conduct research, meaning that researchers or research organisations have to convince government gatekeepers (politicians, bureaucrats or even military officials) of the value of their work (Peil 1993). These approval processes can often be long and arduous, and there is a risk that bribes may be solicited in return for permission (Peil 1993).

In addition, private interests rather than objective criteria may dictate which research projects are selected for public funding or given government approval to proceed. In 2014, it emerged that more than 50 Chinese public officials were suspected of taking bribes from researchers and companies in exchange for government R&D subsidies and grants (The Economist 2014).

### **Fiduciary risks**

The flow of sizeable financial resources into research organisations brings with it similar fiduciary risks to those associated with funding non-governmental organisations (NGOs), such as where researchers deceive funders by deliberately misusing allocated funds (Petkov and Cohen 2016). The misuse of funds in research can happen at any stage of a project cycle, from the initial assessment and allocation of funding to the procurement, implementation and audit phases. Particular attention should be paid to three areas which are especially susceptible to corruption: the procurement of goods and



services, human resources, and finance and auditing (Transparency International 2008: 14-15).

### Embezzlement

Embezzlement of development and research funds is among the most prevalent types of corruption in donor funding. Indeed, a recent transparency [report from the Norwegian Foreign Service Control Unit in the Ministry of Foreign Affairs](#) revealed that out of 900 financial irregularities from partners in the Global South since 2007, the great majority of cases concern a misuse of grant funds, typically embezzlement.

The embezzlement of research funds for personal expenses appears to be a widespread and recurring problem. Semrau, Scott & Vian (2008) reported extensively on a particular [case of embezzlement](#) in one of the East African bases of an international health and medical research organisation. The project reviewed was designed to conduct a clinical drug trial to treat a common disease in the region. Lack of oversight by the project managers and the excessive discretion entrusted to a project administrator resulted in the embezzlement of US\$13,000 of project funds. This is not, however, a problem unique to low-income countries; in Greece, a [university accountant](#) used money from an EU research grant to buy himself a car (Deutsche Welle 2012), while in South Korea a [researcher](#) falsified data and embezzled millions of euros (The Guardian 2009).

### Double funding

Another fairly common financial irregularity is the so-called double dipping or double funding, in which organisations receive, from different donors, double the funds actually needed for a given project. An additional risk that arises in NGO and research funding is that of double funding in overheads, which occurs when funding destined for a specific project ends up serving other projects or general overhead costs (Keating et al. 2005). The double-funding corruption risk is relatively easy to mitigate if roundtable meetings between all partners and donors on one project are organised regularly, especially prior to the audit phase (Ewins et al. 2006).

### Personnel-related fraud

Research organisations have also been known to fabricate “ghost” employees and beneficiaries to inflate the costs of project activities and embezzle the surplus funds (Trivunovic et al. 2011). In the health sector, Trapnell et al. (2017: 41) identify other personnel-related corruption risks relevant for research organisations, such as the extortion

of a share of salaries, selling and buying of positions and promotions, bribes in the selection of training courses and the incorrect use of per diems. A [previous Helpdesk Answer](#) addresses corruption risks in human resources management in developing countries (Chêne 2015).

### Procurement

Research organisations may require specialist expertise or equipment from third parties to carry out their research. Interactions with these external suppliers of goods or services can offer another vector for corrupt practices, particularly during procurement processes. In highly technical areas with a limited number of bidders, the risk of collusion is higher, and one might see evidence of kick-back arrangements, or the duplication, inflation or fabrication of invoices for goods and services allegedly procured for a project (Trivunovic et al. 2011). Corruption can affect the tender specifications, bidding process, the monitoring and auditing of procurement as well as the ultimate delivery of the goods and services procured (Trapnell et al. 2017: 41). The healthcare sector is seen as particularly vulnerable, given it is characterised by large flows of money, specialised equipment and complex organisational structures (Trapnell et al. 2017: 38). Transparency International has developed a range of resources on curbing corruption in procurement processes (Maslen 2016; Martini 2013; Chêne 2010b).

## 3. Mitigating corruption risks in research funding

As yet, little research has been undertaken specifically on corruption in research funding and measures to counter such risks. However, various mitigation strategies can be adapted from other types of donor funded programmes, such as codes of conduct, transparency and accountability mechanisms or risk management frameworks are available to mitigate corruption risks.

### Research codes of Conduct

Codes of conduct for research are common both at national and institutional levels. These usually contain detailed guidance on overall research integrity and conflict of interest issues.

Importantly, codes of conduct define appropriate and inappropriate behaviour, mitigation strategies and potential sanctions. Conflict of interest policies include clear instructions on how to prevent, document and disclose (potential)

conflicts of interest, procedures for complaints about misconduct and clear points of contact.

There are numerous examples of codes of conduct in research, such as:

[The Australian Code for the Responsible Conduct of Research](#) (2007) which has been developed by National Health and Medical Research Council, the Australian Research Council and Universities Australia. It contains information on principles and practice for institutions and researchers, a framework for resolving allegations of misconduct and key guidelines that should be read in conjunction with the code.

[The European Code of Conduct for Research Integrity](#) (2017) published by ALLEA (All European Academies) defines principles, good research practices and violations of research integrity as well as an extensive list of resources on research integrity.

[Ethics for Researchers by the European Commission](#) (2013) This document discusses the research ethics that need to be followed to apply for a grant from the European Union, including for research in developing countries.

[The Netherlands Code of Conduct for Scientific Practice](#) (2012) was drawn up at the request of the Association of Universities in the Netherlands (Vereniging van Universiteiten, VSNU) and defines five principles and best practices: scrupulousness, reliability, verifiability, impartiality and independence

Uganda's [National Guidelines for Research Involving Humans as Research Participants](#) (2007) was prepared by a Task Force set up by the Uganda National Council for Science and Technology (UNCST). The policy has three main objectives: 1) the protection of the rights and welfare of the research participants; 2) the provision of ethical standards and procedures for research involving humans as research participants and 3) ensuring that research considers social and cultural sensitivities of participating communities.

## Accountability and transparency

As discussed above, the mismanagement of research funds is one of the most common corruption risks in research funding, and it is increasingly recognised that the establishment of accountability and transparency mechanisms is crucial. For example, in response to the cases of

bribery in return for research grants mentioned earlier, the Chinese government released guidelines on how to improve transparency in the allocation of research funding as well as enhancing oversight and audit mechanisms (The Economist 2014). While the exact nature of the measures will depend on the organisation and project as well as the country context and available data, some resources are available which are helpful for all research organisations.

Hammer and Whitty (2011) published a [comprehensive list](#) of accountability principles for research organisations, identifying the four key principles of accountability: participation, evaluation, transparency and feedback mechanisms. A corresponding [toolkit](#) describes how these principles can be applied to processes that are common to research organisations.

Trapnell (2015) gives a [detailed account](#) of measurements and methods to measure corruption and anti-corruption. The document provides corruption measurements that can be used during the monitoring and evaluation cycle as well as for evaluation and impact assessment.

In medical research, a recent publication by Transparency International advocates for the mandatory registration of all clinical trials and the obligation to publish their results, whether the outcome is positive or not, in line with international research ethics standards as encapsulated in the 2008 Declaration of Helsinki (Kohler and Martinez 2015).

## Risk management frameworks

While risk management systems in development funding are not without their critics (e.g. Button and Gee 2013; Hart 2015), self-evaluation in the development sector demonstrates strong support for the approach. A 2009 survey of UK charities found that half of those who had experienced fraud put it down to inadequate risk management systems (May 2016).

A comprehensive corruption risk management framework consists of several steps, outlined by Johnsen (2015) as follows:

- Step 1: the potential corruption risks need to be identified and the donor needs to determine the tolerable level of risk. This threshold will be the trigger for escalation or mitigation measures.
- Step 2: the probability of the risk occurrence, as well as the potential impact if the risk is

realised, need to be determined. This can be done with the help of a risk matrix.

- Step 3: next, actual levels of risk need to be compared with the tolerable threshold to determine if corruption risk mitigation is necessary.
- Step 4: project officers should select the optimal mitigation tool based on a cost-effectiveness analysis.

Corruption risk management is an on-going task throughout the entire project cycle, and Jenkins (2016) gives a [comprehensive overview](#) on how corruption risk management should be implemented throughout all phases of the project which is equally applicable to research projects.

Any risk assessment must take the country context as well as the characteristics of the partner institution into account. According to Trivunovic et al. (2011: 5) there are several considerations for donors when helping recipient organisations develop a risk management framework. These include research organisations' internal anti-corruption rules and procedures as well as their capacity to conduct risk assessments. The risk assessment should also closely consider links to the national anti-corruption laws as well as any sector-specific anti-corruption strategies. These may vary widely and require support from donors.

See also Lindner's (2014) [overview](#) identifying eight areas that should be covered by NGO's internal corruption policies: 1) a commitment to zero tolerance; 2) clear definitions of corruption; 3) a clear description of codes of conduct and expected behaviour in relation to corruption; 4) effective complaint mechanisms and a system of whistleblower protection; 5) Transparency mechanisms to establish a culture of disclosure; 6) Sanctions; 7) Due diligence; 8) the implementation strategy for the anti-corruption policy.

The European Economic Area (EEA) and Norway Grant is grant scheme that explicitly also covers large research grants. Hence their [extensive corruption risk management system](#), developed by the Financial Mechanisms Office (representing the European Economic Area and Norway Grants) together with Transparency International can be a comprehensive example for other research funding agencies. This risk management system, which includes examples of corruption risk assessment methodology and reports, could serve as an example for other funding agreements. This system also entails a [detailed](#)

[overview of risk mitigation measures](#) to target corruption risks at national, programme and project levels. At the national level, the measures focus on improving capacity, preventing and detecting corruption, the establishment of an effective complaint mechanism and whistleblower protection policies. At the programme level, the measures include creating targeted auditing to identify and address corruption risks and increase transparency and auditing, improving selection procedures and proper monitoring during programme implementation. At the project level, the focus lies on the oversight of procurement procedures.

### Anti-corruption measures in funding agreements

To ensure corruption risk management is implemented throughout the research organisation and its projects, it is advisable to include anti-corruption provisions in any funding agreement between the organisation and donors. Chêne (2010a) discusses the kind of anti-corruption measures which could be provided in donor funding agreements, and they can be applied to research funding.

As a first step, a common understanding regarding what constitutes corrupt practices needs to be established to ensure that any corrupt or fraudulent incidents are recognised as such by all parties. Donors could refer to the definitions provided by the [International Financial Institution Anti-Corruption Task Force](#).

Furthermore, the results of an initial risk assessment could be included in the agreement, providing a baseline for the extent and type of corruption risks involved in the project. Anti-corruption measures in funding agreements have been found to be more effective when they address both prevention and detection, as well as establishing an appropriate escalation mechanism and sanction regime (Chêne 2010a).

Analysing the existing anti-corruption measures in funding agreements of major international donors, Chêne (2010a) identified several areas that should be covered comprehensively:

- explicit anti-corruption policies and internal integrity management systems
- explicit assessment of corruption risk
- management policies and practices
- transparency, disclosure and access to information

- methods for detecting fraud and corruption, such as:
  - monitoring and supervision of projects
  - external audits of specific projects
  - effective complaint mechanisms and whistleblowing protection
  - sanctions

## 4. References

Aubert, J. 2005. Promoting Innovation in Developing Countries: A Conceptual Framework. World Bank Policy Research Working Paper 3554. Retrieved from: <http://web.worldbank.org/archive/website01033/WEB/IMAGES/WPS3554.PDF>

Bachai, S. 2016. The CDC is Being Influenced by Corporate and Political Interests. Retrieved 28 October 2017, from <http://thehill.com/blogs/pundits-blog/healthcare/301432-the-cdc-is-being-being-influenced-by-corporate-and-political>

Bero, L. A. 2012. Tobacco Industry Manipulation of Research. In EEA. (eds). Late lessons from early warnings: science, precaution, innovation, EEA Report No 1/2013. Pp.151-178. <https://www.eea.europa.eu/publications/late-lessons-2/late-lessons-chapters/late-lessons-ii-chapter-7>

Bio Ethics Archive. No date. *Ethical and Policy issues in International Research: Clinical Trials in Developing Countries*. <https://bioethicsarchive.georgetown.edu/nbac/clinical/Chap3.html>

Brooks, T. 2013. In Focus: Government Priorities and Academic Research Funding. Global Corruption Report 2013: Education. P.204ff. [https://www.transparency.org/gcr\\_education](https://www.transparency.org/gcr_education)

Bruckner, T. 2017. 'Grantees, Reveal Thy Findings: A Push by Funders for Transparency in Medical Research', *Inside Philanthropy*. <https://www.insidephilanthropy.com/home/2017/7/28/transparency-clinical-trials-gates-welcome>

Button, M and Gee, J. 2013. Countering Fraud for Competitive Advantage. <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1119994748.html>

Chêne, M. 2010a. Examples of Anti-Corruption Clauses in Cooperation Agreements. Transparency International/U4. <https://www.transparency.org/files/content/corrupti>

[onqas/239\\_Anti-corruption\\_clauses\\_in\\_cooperation\\_agreements.pdf](https://www.transparency.org/files/content/corrupti/onqas/239_Anti-corruption_clauses_in_cooperation_agreements.pdf)

Chêne, M. 2010b. *Examples of Procurement Compliance Checklists*. [https://www.transparency.org/whatwedo/answer/examples\\_of\\_procurement\\_compliance\\_checklists](https://www.transparency.org/whatwedo/answer/examples_of_procurement_compliance_checklists)

Chêne, M. 2015. Corruption and Anti-Corruption Practices in Human Resource Management in the Public Sector. [https://www.transparency.org/whatwedo/answer/corruption\\_and\\_anti\\_corruption\\_practices\\_in\\_human\\_resource\\_management\\_in\\_th](https://www.transparency.org/whatwedo/answer/corruption_and_anti_corruption_practices_in_human_resource_management_in_th)

Deutsche Welle. 2012. *EU Funds for Projects that Never Existed*. <http://www.dw.com/en/eu-funds-for-projects-that-never-existed/a-16113829>

Egharevba, E. and Atkinson, J. 2016. The Role of Corruption and Unethical Behaviour in Precluding the Placement of Industry Sponsored Clinical Trials in Sub-Saharan Africa: Stakeholder Views. *Contemporary Clinical Trials Communications*, 3, 102–110.

Ewins et al. 2006. Mapping Corruption Risks in Humanitarian Assistance. HPG, Transparency International, Chr. Michelsen Institute. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/874.pdf>

Hammer, B. and Whitty, B. 2011. Accountability Principles for Policy Oriented Research Organisations. One World Trust <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/48097/IDL-48097.pdf?sequence=1&isAllowed=y>

Hart, E. 2015. Building Donor's Integrity Systems: Background Study on Development Practice. OECD/U4. <http://www.u4.no/publications/building-donors-integrity-systems-background-study-on-development-practice/>

Jenkins, M. 2016. Overview of Corruption Risk Management Approaches and Key Vulnerabilities in Development Assistance. U4 Expert Answer. <http://www.u4.no/publications/overview-of-corruption-risk-management-approaches-and-key-vulnerabilities-in-development-assistance/>

Johnsøn, J. 2015. The Basic of Corruption Risk Management: A Framework for Decision Making and Integration into the Project Cycles. <http://www.u4.no/publications/the-basics-of>



corruption-risk-management-a-framework-for-decision-making-and-integration-into-the-project-cycles/

Kassirer, J. 2006. The Corrupting Influence of Money in Medicine. Global Corruption Report 2006: Health. Transparency International. Retrieved from: [https://issuu.com/transparencyninternational/docs/2006\\_gcr\\_healthsector\\_en](https://issuu.com/transparencyninternational/docs/2006_gcr_healthsector_en)

Keating E., Fischer M., Gordon T. & Greenlee, J. 2005. Assessing Financial Vulnerability in the Nonprofit Sector. Working Paper RWP05-002. John F. Kennedy School of Government. Harvard University. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=647662](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=647662)

Kenny C. 2007. How Much Aid is Really Lost to Corruption? Center for Global Development. <https://www.cgdev.org/blog/how-much-aid-really-lost-corruption>

Kohler, J.C. and Martinez, G. 2015. *Corruption and the Pharmaceuticals & Healthcare Sector: A Mapping of Global Policy Issues and Anti-Corruption Measures in the Pharmaceutical Sector*. [https://issuu.com/transparencynuk/docs/global\\_pharma\\_policy\\_issues\\_and\\_ant](https://issuu.com/transparencynuk/docs/global_pharma_policy_issues_and_ant)

Lexchin, J. 2012. Those Who Have the Gold Make the Evidence: How the Pharmaceutical Industry Biases the Outcomes of Clinical Trials of Medications. *Science and Engineering Ethics*, 18. P. 247-261. <http://link.springer.com/article/10.1007/s11948-011-9265-3>

Lindner, S. 2014. Assessing Anti-Corruption Policies of Non-Governmental Organisations. U4 Expert Answer. <http://www.u4.no/publications/assessing-anti-corruption-policies-of-non-governmental-organisations/>

Martini, M. 2013. *Conflict of Interest in Public Procurement*. [https://www.transparency.org/whatwedo/answer/conflict\\_of\\_interest\\_in\\_public\\_procurement](https://www.transparency.org/whatwedo/answer/conflict_of_interest_in_public_procurement)

Maslen, C. 2016. *Collusion in Public Procurement Contracts*. [https://www.transparency.org/whatwedo/answer/collusion\\_in\\_public\\_procurement\\_contracts](https://www.transparency.org/whatwedo/answer/collusion_in_public_procurement_contracts)

May, O. 2016. *Fighting Fraud and Corruption in the Humanitarian and Global Development Sector*. Routledge: London.

Norwegian Ministry of Foreign Affairs. 2017. Report on cases of financial irregularities in 2016 [Rapport]. Retrieved 1 November 2017, from [https://www.regjeringen.no/en/dokumenter/financal\\_irregularities/id2537847/](https://www.regjeringen.no/en/dokumenter/financal_irregularities/id2537847/)

OECD. 2012. *Innovation for Development*. Retrieved from: <http://www.oecd.org/innovation/inno/50586251.pdf>

Olken, B & Pande, R. 2012. *Corruption in Developing Countries*. Abdul Latif Jameel Poverty Action Lab's Governance Initiative <https://economics.mit.edu/files/7589>

Peil, M. 1993. Situational Variables. In Bulmer, M., & Warwick, D. P. (Eds.). *Social research in developing countries: Surveys and censuses in the Third World* (pp.71-90). Psychology Press.

Petkov, M. and Cohen, D. 2016. *Diagnosing Corruption in Healthcare*. Transparency International UK: London. <http://www.transparency.org.uk/publications/diagnosing-corruption-in-healthcare/>

Robinson, D. 2013. *Corrupting Research Integrity: Corporate Funding and Academic Independence*. Global Corruption Report, 2013. Pp 202-210

Rose-Ackerman, S. 1996. *The Political Economy of Corruption. Causes and Consequences*. Public Policy for the Private Sector. World Bank, n°74. <http://documents.worldbank.org/curated/en/231001468762302694/pdf/multi-page.pdf>

Sass, J. 2008. *Bending Science: How Special Interests Corrupt Public Health Research*. *Environmental Health Perspectives*, 116(11), A500.

Semrau, K., Scott, N., Vian, T. 2008. *Embezzlement of Donor Funding in Health Projects*. U4 Issue N°11, Chr. Michelsen Institute. Retrieved from: <http://www.u4.no/publications/embezzlement-of-donor-funding-in-health-projects/>

Ssali, A., Poland, F. and Seeley, J., 2016. 'Exploring informed consent in HIV clinical trials: A case study in Uganda', *Heliyon*, 2(11). <http://www.sciencedirect.com/science/article/pii/S2405844016306041>

Stelfox H, Chua G, O'Rourke K, and Detsky, A. 1998. "Conflict of Interest in the Debate over Calcium Channel Antagonists", *New England Journal of Medicine*, vol. 338 (1998), pp. 101–106.

The Economist. 2014. *R&D in China: Research and Embezzlement*.  
<https://www.economist.com/blogs/analects/2014/03/rd-china>

The Guardian. 2009. *Disgraced Cloning Expert Convicted for Embezzlement and False Claims*.  
<https://www.theguardian.com/world/2009/oct/26/cloning-stem-cell-scientist-disgraced-korea>

The Union of Concerned Scientists. 2012. *Heads They Win, Tails We Lose: How Corporations Corrupt Science at the Public's Expense*.  
[http://www.ucsusa.org/sites/default/files/legacy/assets/documents/scientific\\_integrity/how-corporations-corrupt-science.pdf](http://www.ucsusa.org/sites/default/files/legacy/assets/documents/scientific_integrity/how-corporations-corrupt-science.pdf)

Transparency International UK. 2016. *Corruption in the Pharmaceutical Sector: Diagnosing the Challenges*.  
<http://www.transparency.org.uk/publications/corruption-in-the-pharmaceutical-sector/#.Wf8MdGjWw2w>

Transparency International. 2008. *Preventing Corruption in Humanitarian Assistance, Final Research Report*. Feinstein International Center, HPG-ODI. Retrieved from:  
<https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/1836.pdf>

Trapnell, S., Jenkins, M., Chêne, M. 2017. *Monitoring Corruption and Anti-Corruption in the Sustainable Development Goals: A Resource Guide*. Transparency International.  
[https://www.transparency.org/whatwedo/publication/monitoring\\_corruption\\_and\\_anti\\_corruption\\_in\\_the\\_sustainable\\_development\\_go](https://www.transparency.org/whatwedo/publication/monitoring_corruption_and_anti_corruption_in_the_sustainable_development_go)

Trapnell, S. 2015. *User's Guide to Measuring Corruption and Anti-corruption*. UNDP.  
<https://www.globalintegrity.org/wp-content/uploads/2015/11/Users-Guide-Measuring-Corruption-Anticorruption.pdf>

Trivunovic, M., Johnson, J., Mathisen, H. 2011. *Developing an NGO Corruption Risk Management System: Considerations for Donors*. U4 Issue Brief.  
<http://www.u4.no/publications/developing-an-ngo-corruptionrisk-management-system-considerations-for-donors/>

van Helden, P. 2012. *The Cost of Research in Developing Countries*. *EMBO Reports*, 13(5), 395–395.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3343354/>

Vian, T. 2007. *Review of Corruption in the Health Sector: Theory, Methods and Interventions*. *Health Policy and Planning*, 23(2), 83–94.  
<https://academic.oup.com/heapol/article/23/2/83/590549>