



Department  
for International  
Development



NATURAL RESOURCE REVENUE MANAGEMENT IN LOW AND  
MIDDLE INCOME COUNTRIES EXPERIENCING POLITICALLY  
FRAGILE CONDITIONS

A SYSTEMATIC REVIEW

DRAFT (REVISED) PRELIMINARY PROTOCOL [JULY 2016]

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**Acknowledgments**

The authors gratefully acknowledge the advice and feedback received from the Advisory Group comprising of Dr Prodipto Ghose, Distinguished Fellow and Director, TERI, and Mr S Vijay Kumar, Distinguished Fellow, TERI.

The authors are also thankful to EPPI-Centre and LIRNEasia for providing quality assurance support and capacity building support and PwC for providing programme management support. The authors would also like to thank DFID's South Asia Research Hub (SARH) and DFID advisors for their feedback and advisory support from time to time.

**Contributions**

The opinions expressed in this publication are not necessarily those of the UK Department for International Development, PwC, the EPPI-Centre, LIRNEasia or [name of the lead institution doing the review, e.g. TERI]. Responsibility for the views expressed remains solely with the authors.

**Citation**

This report should be cited as: Ghose J, Kapur S, Arora N, Sharma R, Deepa N, Govindan M (2016) Natural Resource Revenue Management In Low And Middle Income Countries Experiencing Politically Fragile Conditions : A Systematic Review. Preliminary Protocol. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London.

**Conflicts of interest**

There were no conflicts of interest in the writing of this report.

**Funding**

This is an independent report commissioned and funded by the Research and Evidence Division in the Department for International Development. This material has been funded by UK aid from the UK Government; however, the views expressed do not necessarily reflect the UK Government's official policies.

This material has been funded by the Department for International Development. The views expressed do not necessarily reflect the views of the Department for International Development. The authors are part of The Energy and Resources Institute (TERI) and were supported by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), LIRNEasia and PwC.

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### 1.1 RATIONALE AND REVIEW QUESTIONS

It is often seen that countries do not see their expected returns of social and economic development from the discovery of natural resources. The main reason for this is the poor management of natural resource revenues. Further, countries with large natural resource reserves tend to suffer from the adverse effects of what is termed 'Dutch disease', a phenomenon which occurs when resource exports grow and the exporting country's exchange rate goes up (i.e., the currency appreciates). As a result, other sectors that depend on exports, such as manufacturing, may shrink, leading to lower economic growth. Additionally, the shift of workers and investment to the resource sector, can drive up overall prices and dampen other sectors important for growth. The presence of natural resources is also seen to contribute to conflicts<sup>1</sup> including civil wars, especially in developing countries with low institutional capacity.

Natural Resource Revenue Management refers to policies and techniques adopted by the government to manage and augment revenues from natural resources. This includes interventions to maximize the government's share of the natural resource revenue; to optimize allocation of natural resource revenue; and to ensure transparency and accountability in the management of natural resource revenue.

For instance, governments use a variety of fiscal instruments including profit taxes, revenue or volume-based fees or taxes, production sharing, explicit rent-capture mechanisms, bonuses, equity participation and competitive tenders to generate revenues from natural resources. Natural resource revenue management also includes designing policies to optimize allocation of natural resource revenue to promote inclusive growth, sustainable development, private sector growth and attain inter-generational equity. Building accountability and transparency in managing natural resources and revenues from these resources is also an integral part of natural resource revenue management.

The effective management of natural resource revenues become all the more challenging for countries experiencing fragile situations. Fragile conditions include the presence of prolonged conflict, but more generally refer to low institutional capacity manifested in high levels of corruption or limited transparency and accountability. It thus becomes important for these countries to take into account

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<sup>1</sup>One of the factors causing these conflicts is the operations of Extractive companies including multinationals. These companies have found to be working with states, local elites and national NGOs in order to secure a stable access to land and resources and ultimately failing in many cases to translate the benefits from extraction into equivalent wealth for the people. The companies have entered into opaque deals over access to resources, poor accountability and institutional arrangements that are likely to prioritize their own demands over local development (Bebbington et al 2008). The result of the inequality has been bitterness, mistrust and alienation of the local communities which then proved a precursor to social conflict.

their vulnerabilities, inefficiencies and challenges when designing and implementing policies for utilizing natural resource revenues.

In this context, this systematic review seeks to examine the effectiveness of interventions made by governments to manage natural resources, specifically mineral resources, through a study of existing literature, and outline policy options for resource rich countries experiencing fragile conditions. The relevance of these options for South Asia in particular will be considered. For the purpose of this review, the South Asian region consists of Afghanistan, Pakistan, Nepal, India, Bangladesh, and Myanmar. Recommendations will be made for the South Asian region as a whole, but will also be contextualized for two countries in particular – Afghanistan and Myanmar, which are rich in natural resources, and are experiencing higher levels of political fragility.

The questions which are sought to be answered through this systematic review are as follows:

**Primary review question:**

How can mineral resource revenue be managed effectively in resource rich, developing (low and middle income countries) countries experiencing politically fragile conditions?

**Sub-questions:**

- What are the various interventions available to countries to manage their mineral resource revenues?
- To what extent have these interventions achieved their intended outcomes?
- What are the key challenges in implementing these interventions in countries experiencing politically fragile conditions?
- What are the effects of various approaches for managing Natural Resource Funds adopted by countries rich in natural resources but experiencing fragile circumstances?<sup>2</sup>

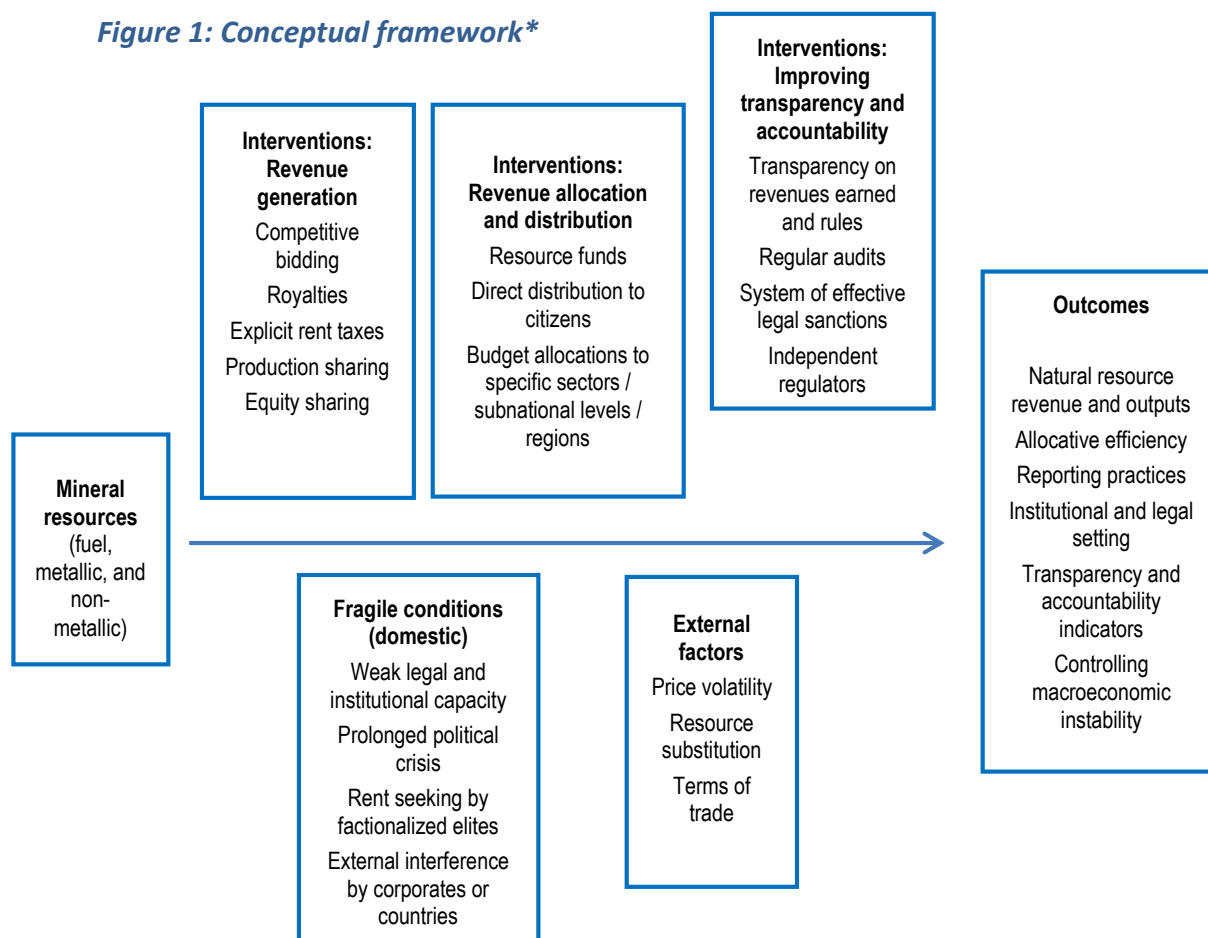
## 1.2 CONCEPTUAL FRAMEWORK

The conceptual framework for this review seeks to provide an outline of: (i) resources examined, (ii) possible interventions which may be made to manage revenue from natural resources, (iii) socio-economic and political contexts within which these interventions take place (in particular political fragility), and (iv) key outcomes which are hoped to be achieved through effective natural resource revenue management. Figure 1 depicts this framework.

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<sup>2</sup> Addressal of this sub question will be dependent on availability of sufficient relevant literature on Natural resource funds.

**Figure 1: Conceptual framework\***



**\*Note:** The conceptual framework will be developed further as the research progresses. Depending on the nature of the available literature, specific interventions or outcomes may be included or excluded.

As can be seen in Figure 1, we examine the impact of specific interventions for managing mineral resource revenues on achieving certain desired outcomes. We also understand that these interventions are made in socio-economic and political contexts which present certain challenges to achieving these outcomes.

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**FOCUS ON MINERAL RESOURCES**

We restrict the scope of the study to mineral resources. Non-mineral resources (which include forests, agriculture, renewable resources such as solar, wind, and water resources) will be excluded from the purview of this study.

Our justification for focusing on mineral resources (defined here to include fuel, metallic, and non-metallic minerals) is based on the following reasons: firstly, the focus of a large part of the existing literature is on mineral resources; secondly, the objective of the Systematic Review highlights the need to focus on different approaches to managing Natural Resource Funds (Sovereign Wealth

Funds), and sovereign wealth funds are largely composed of revenue from minerals ; and thirdly, in terms of contextualization to South Asia, and to Afghanistan and Myanmar in particular, mineral resources form a large part of the natural resource base of the six chosen countries – Afghanistan, Myanmar, Nepal, India, Pakistan and Bangladesh.

Mineral resources are defined as a concentration of naturally occurring solid, liquid or gaseous material in or on the earth’s crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible (United States Geological Survey). These are non-renewable and are categorized into three types: metallic, non-metallic, and fuel.

Metallic minerals contain metal in its raw form. These are of two types – ferrous (those which primarily contain iron) and non-ferrous (those which are not primarily composed of iron). Metallic minerals include aluminium, antimony, barium, bauxite, beryllium, chromite, clays, cobalt, copper, feldspar, fluorite, gallium, gold, gypsum, halite, indium, iron ore, lead, lithium, manganese, mica, molybdenum, nickel, perlite, platinum, phosphate, potash, rare earths, pyrite, silica, silver, soda ash, sulphur, tantalum, titanium, uranium, vanadium, zeolites, and zinc.

Non-metallic minerals do not contain metals and include marble, granite, sandstone, porphyry, basalt, chalk, dolomite, limestone, gypsum, slate, chemical and fertilizer minerals, salt, clays, kaolin, sand, and gravel.

There are also fuel minerals such as coal, oil, and natural gas which account for a significant share of mineral production. This review will examine these three types of mineral resources.

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## INTERVENTIONS

There are three major categories of interventions relating to natural resource revenue management we seek to understand in this Review. These include: (i) those made at the revenue generation stage, (ii) those made for effective allocation and distribution of revenue, and (iii) those which seek to increase transparency and accountability. A brief description of the interventions is provided below.

Revenue Generation: Effective revenue generation interventions seek to maximise revenue without creating disincentives for production. Ideally governments should receive at least half the rents generated by mining, and at least two-thirds from petroleum. Rents which are lower than this can be a cause for concern, and governments may need to review their fiscal and policy regimes (IMF 2013).

Intervention	Description
Competitive bidding	At the stage of the initial public offering sealed bids are invited and contracts are offered to the bidder with the best prices and contracts.



Royalty	<p>A royalty is a payment made by a mining company to the government in return for permission to: (i) access and extract minerals and/or (ii) develop minerals. Royalties are either specific levies (based on the volume of minerals extracted) or ad valorem levies (based on the value of the minerals extracted).</p> <p>They may be imposed at the national or sub-national level of government. In addition, they may be fixed or variable. Variable royalties are those which are not fixed based on the type of mineral but may vary with changes in operating profits.</p>
Resource rent tax	<p>A resource rent tax is a tax on the profits generated from mineral extraction or development. It captures a share of the mineral rent which is the return over and above the company's opportunity cost of capital.</p> <p>A resource rent tax is imposed only if the accumulated cash flow from the project is positive, that is, if the project is profitable.</p>
Production sharing	<p>More common for petroleum, production sharing is an intervention through which production at a surface delivery point is shared between a government and private entity. Production sharing agreements determine how much revenue each entity will receive.</p>

Allocation and Distribution of Revenue: Efficient and equitable allocation of natural resource revenue can be challenging for policy makers because of rent seeking by political elites, and lack of transparency and accountability. On the other hand, if allocated efficiently and equitably, natural resource revenue can be an engine for socio-economic development.

Intervention	Description
Natural resource funds	<p>A natural resource fund is a special purpose investment vehicle owned by the government, and is constituted from revenue derived from mineral sales.</p> <p>The objectives may include saving for future generations, covering budget deficits, and allocating revenue for specific sectors. In Stage II of the review we may focus specifically on natural resource funds if there is enough literature on the topic.</p>
Distribution to citizens	<p>A small number of governments have sought to share revenue benefits directly with citizens through cash transfers. These transfers may be</p>

	conditional or unconditional. This form of distribution intends to increase citizen engagement, stimulating consumption and reducing inequality in mineral rich countries.
Budgetary allocations for specific sectors / sub-national levels	Some national governments choose to allocate natural resource revenues to specific sectors, sub-national governments, or regions through budgetary allocations. More than 30 countries, including Indonesia, Peru, and Nigeria, allocate a percentage of natural resource revenues to sub-national governments. The amount distributed is often a measure of the fiscal federalism in the country.

Transparency and Accountability: It has been observed that resource rents often create incentives for non-transparent and discretionary management of public revenue to support corrupt government practices (Mehlum et al., 2006). Governments are often unable or unwilling to create and enforce interventions to regulate extractive industries (Acosta 2013). Interventions to improve transparency and accountability in the extractive industries sector seek to make governments more accountable at the generation and allocation stages and contribute to optimal and equitable generation and use of revenues from natural resources.

Intervention	Description
Transparency in rules and revenue earned	These include regular reporting of revenues earned from natural resources by government; establishing clear mechanisms and rules (including legal framework and fiscal regime) through identifying rights and responsibilities relating to extraction and use of natural resources; requiring extractive industries (government and private) to disclose their extraction and trading activities; and maintaining a register of all natural resource rights holding.
Regular audits	Authorities are established to conduct and report on audits of extractive industries.
Effective sanctions	Sanctions can be at several levels: local, domestic, or international. They can also be informal or legal.
Independent regulators	Establishing an oversight agency with the requisite financial, technical and political autonomy to function effectively.

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## CONTEXT

We have outlined certain conditions which have an impact on the effectiveness of intervention. These include conditions such as weak institutional capacity, prolonged political crisis, rent seeking by elite groups, and interference by external corporates and countries. Weak institutional capacity may be reflected in corruption or low transparency and accountability measures.

Certain external factors can also impact the management of natural resource revenue, including price volatility of resources, discovery of resource substitutes, and terms of trade relating to these resources.

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## OUTCOMES

The outcomes which we will focus on pertain to: (i) natural resource revenue and outputs, (ii) allocative efficiency, (iii) reporting practices (iv) institutional and legal setting (v) transparency and accountability indicators, and (vi) controlling macroeconomic instability.

### 1.3 POLICY AND PRACTICE BACKGROUND

Sustainable natural resource management has the potential to transform economies of resource-rich countries. Many resource-rich developing countries fail to realize the full development potential of their natural resources, particularly in the case of oil, gas, and mineral resources. Oil, gas and mineral revenues are special because they are finite, volatile and, if large enough, can negatively impact other industries which use these minerals as raw materials. They also generate large economic rents and are location-specific, which can lead to conflict over their control. The revenue that can be generated from these resources can finance public goods and services that contribute towards sustainable development and poverty reduction, such as investment in education, health, and physical infrastructure and boost economic growth. As a result, they need to be managed and distributed efficiently and effectively.

It is often seen that countries experiencing fragile conditions such as prolonged political conflict have abundant natural resources that can serve as a foundation for socio-economic development. However the capacity of governments to effectively transform these resources into sustained economic growth, employment creation and achievement of other developmental goals is often limited. Moreover, natural resources are often strongly linked to conflict and fragility, from diamonds financing conflict in Sierra Leone to the control of oil fields as a source of conflict in Sudan. Further, these natural resource rich fragile countries often rely heavily on one or two types of resources to deliver a large share of total fiscal revenue, rather than on a well-balanced mix – 84% of fiscal revenue comes from oil in Iraq, and this amount is 82% in the DRC, 78% in Angola, 76% in Nigeria, 68% in

Yemen, 67% in Chad and 55% in Sudan (IMF, 2012). In South Sudan, as much as 98% of fiscal revenue came from oil in 2011 (World Bank, 2013).

This dependency on income from natural resources leaves fragile states without any sustainable source of income and highly vulnerable by exposing them to shocks in commodity prices – as demonstrated by the sudden fall in commodity prices in 2009 following the 2002-2008 boom. Thus the specific challenge for fragile states that derive much of their revenue from natural resources is to have robust and transparent systems in place to capture, manage and distribute that wealth fairly.

This review seeks to address the problem of the low capacity of certain resource rich countries to effectively manage the revenue from natural resources and channelize it towards positive social and economic outcomes. Many countries, particularly those with fragile conditions do not see their expected returns of social and economic development when they discover natural resources. Instead, grabbing of the resource rent by officials and various groups in society and spread of corruption, greater inequality, weaker institutions, higher risk of civil war, and lower stocks of human and public physical capital may be experienced. The presence of natural resources in these cases may, in fact, hinder socioeconomic development.

In this context, the review will analyse existing approaches adopted to manage revenue obtained from natural resources by governments which operate in fragile conditions to understand which interventions have been most effective. This will hopefully be of use to policy makers, practitioners, researchers, and citizens in low and middle income resource-rich countries.

The review will also cover issues around management of the natural resource revenue by subnational governments and some particular challenges that subnational governments face. National governments often share the responsibilities of governing with state and local governments through a process of decentralization, including those relating to natural resource governance. Of the 58 resource-rich countries in the Natural Resource Governance Institute's 'Resource Governance Index,' 30 have revenue-sharing mechanisms through which national governments transfer income from natural resources to state, regional and local governments (Bauer 2013).

In many federal resource-rich countries, local governments receive resource revenues either through direct payments from companies or through transfers from the national government. However deciding whether subnational governments should receive resource revenues is often a complicated policy question involving competing objectives, including promoting national cohesion, interregional equity, effective national fiscal management, and optimizing resource exploitation over time and space.

The review seeks to identify effective revenue sharing arrangements between national and sub-national levels of government. While contextualizing the review for Myanmar and Afghanistan,

certain aspects of revenue sharing policies such as transparency, sustainability, and distributional effects become extremely important. It is also crucial to consider how any wealth-sharing arrangements could be integrated with general fiscal decentralization and mainstream budgeting in the country.

The review will be done in two stages. In the first stage literature relating to all interventions mentioned in Section 1.3 (revenue generation, allocation, and transparency) will be examined. If there is sufficient literature on natural resource funds, in Stage II of the review, the team will try to understand and measure the effects of natural resource funds as a method to manage natural resource revenue. In case there is not enough literature on natural resource funds, the issue will be discussed with EPPI-Centre and DFID and attempts will be made to analyse available studies on natural resource funds in the best possible manner. Further, if it is not possible to include analysis of Natural Resource funds in the main review, it can be included as part of the contextualisation analysis.

## 1.4 RESEARCH BACKGROUND

Literature on natural resource revenue management has examined practices across geographical regions in both developed as well as developing country contexts. Most research has focused on Africa, Latin America, and to some extent East Asia to understand the specific challenges facing developing countries.

There are no previous systematic reviews of studies examining effective management of natural resource revenue in politically fragile low and middle income countries. An approach to a systematic review was made to determine the effect of three types of revenue sharing and investment arrangements (such as public investment projects, sovereign wealth funds, and direct cash transfer) on economic growth and poverty reduction in resource rich, low and middle income countries. (Nguyen et al, 2012).

To assess the macroeconomic implication of investment surges in resource rich developing countries, two models have been established, namely Sustainable Investing Tool (Berg et al, 2013) and the DIGNAR model (Melina et al, 2014) and their application have been tested in various countries.

Amongst the most important reviews, which is not a systematic review, is that by Ploeg (2007), which provides a comprehensive review of existing literature on the diverse experiences of resource rich economies in managing revenues including those countries which have managed to convert natural resources into positive economic and social outcomes such as Australia, Botswana, Canada, and Norway as well as those that have not experienced any significant economic or social benefits (and even experienced low or negative economic growth) despite being rich in natural resources such as Nigeria, Iran, Venezuela, Libya, Columbia, and Sierra Leone. In addition, literature on natural resource

revenue management practices in Papua New Guinea, Chile, Peru, and Chad were examined in particular.

Another impact of the resource curse or of poorly managed resource natural revenue, which is discussed in literature on the subject, is conflict relating to natural resources. According a Guidance Note (2013) by the Nation Development Group (UNDG) and the Executive Committee on Humanitarian Affairs (ECHA) at least 17 violent conflicts have involved the exploitation of natural resources. Research further suggests that over the last 60 years at least 40 per cent of all interstate conflict are linked to natural resources. In 2005, Paul and Anke, in their paper suggested that countries with abundance of natural resources are more prone to violent conflict. Jeroen, Koen and Nathaniel in 2013, conducted a systematic review of literature on resources, conflict, and governance. There was a literature review of studies on natural resources and conflict conducted in 2011 (Mildner et al 2011). The authors conclude that the main findings from the literature are often difficult to compare due to lack of adequate general definitions and measurements of resource scarcity, abundance, and conflict.

Some country specific studies have also been conducted to identify policies and frameworks which would be effective for particular countries. In 2014, a literature review was commissioned by the Revenue Watch Institute-Natural Resource Charter (RWI-NRC) to map existing research on extractive resource management and human development in Tanzania. This review summarised the country-focused literature on key aspects of the extractive resource management process and identified areas where additional research could support the formulation of Tanzania's extractive industries' strategy. The review concluded that much of the Tanzania specific literature merely summarise opinions on topics or reports incidences, and there is a lack of technical analysis on Tanzania-specific extractive resource attributes.

In 2013, the Government of New Zealand's Ministry of Environment conducted a literature review of Natural Resources Frameworks, to provide insight into a range of frameworks found in the international literature that are conducive to natural resource and environmental policy-making and that have inspired and aided the development of the Natural Resources Framework.

A pioneer study by Sachs and Warner (1995) showed that throughout the world, in resource rich countries, the per capita GDP has grown less rapidly than in resource poor countries. Most of the resource-curse literature follows Sachs and Warner (1995) by assessing development outcomes in terms of GDP growth with the linkages coming through the translation of exploitation of oil, gas and minerals into immediate GDP growth without considering the concomitant depletion of the natural capital base, in particular the reduction of national sub-soil wealth.

In 2005, Mehulam, Moene, and Torvik in an extension to the theory, argued and provided evidence that institutions play a decisive role in the manner the resource curse manifests in a country.

Resource rich countries also suffer from poorly developed financial systems and from financial remoteness, and are therefore likely to experience bigger macroeconomic volatility (Rose and Spiegel, 2009). However, there is evidence of some natural resource– rich countries having performed far better than others in resource wealth management and long- term economic development. For instance United Arab Emirates, by investing heavily in infrastructure and modern education, managed to avoid the resource curse (Fasano, 2002). There are similar examples in countries such as Indonesia (Sigit, 1978), Botswana (Acemoglu, Johnson and Robinson, 2003), etc.

In a review of literature on the resource curse, Torres et al(2013) find that the literature is closer to providing a more comprehensive and accurate answer to the curse paradox. This is especially in terms of estimation methods (by controlling for unobserved effects with panel data). However, the variety of results which arise from using different resource proxies and empirical approaches (e.g., cross-section versus panel analyses) make comparison more difficult. Overall, the quality of institutions and policies, especially fiscal policies, appeared to be the most credible explanation for the resource curse.

In fragile states, the economic rents from natural resources are often misappropriated and invested in patronage politics and political repression rather than in infrastructure, health services and education. In addition, a surge in natural resource revenue often leads political leaders to overspend on consumption and non-productive assets. These expenditures contribute to GDP growth but not necessarily to sustainable development.

Much of the literature has examined the effectiveness of country specific interventions, given the challenges of designing interventions which suit varied country contexts. In China, for example, the local state agencies designed schemes to allow local communities to share resource wealth (Zeng M., Zhan J.V. 2015); and a proposed solution for the resource curse in Nigeria involved directly distributing oil revenue to the public (Martin and Subramaniam, 2013). Rundquist (2014) examined the role played by civil society in the management of Ghana’s oil resources. Another study shows how Timor Leste, successfully managed its natural resource revenue by establishing a sovereign wealth fund and ensuring transparency in its functioning (McKechnie, 2013). Fuentes (2009) outlines the detailed steps taken by Chile to lessen its vulnerability to commodity shocks. Cook in 2013, in context of Royal Bafokeng Nation, argues that direct benefits can be provided to local communities if the royalties and dividends from mineral resources are managed well. An IMF paper in 2013 presents an assessment of leveraging oil wealth for development in Kazakhstan. Iimi (2007) discusses how Botswana managed to overcome the resource curse. In 2013, an IMF report focuses on common policies for member countries of Central African Economic and Monetary Community (CEMAC) for managing revenue from natural resources.

One aspect that has not been covered by any review, whether in a systematic or through a comprehensive literature review, is that of managing natural resource revenue in a federal context. Subnational distribution of revenue is one possible method to allow those most directly impacted by

resource extraction to have access to the revenue generated from extraction and use. The amount distributed is often a function of the degree of fiscal federalism in the country and of the political power of subnational versus national governments. This aspect becomes extremely relevant to the South Asian context, given that there is a federal structure of government in most countries of the region.



## CHAPTER 2: METHODS USED IN THE REVIEW

### 2.1 DESIGN OF THE SYSTEMATIC REVIEW

The review will be done in two stages.

**Stage I** will include: (i) searching relevant databases for studies, based on inclusion and exclusion criteria; (ii) screening (checking) studies to exclude those that do not meet inclusion criteria, (iii) coding key characteristics of studies (scoping). This will include details of the publication date, study aim and methodological design, type of data collected (e.g. numerical or narrative), geographical location and other descriptive detail to support stage II. We will refine the research questions further based on our findings at the end of the scoping exercise. We will also decide which areas of the question to focus on in Stage II of the review.

In **Stage II** we will further add to the preliminary protocol and prepare a Stage II protocol. A presentation will be made to the SR consortium, DFID, and the advisory group. Relevant data (qualitative and quantitative) and other information will be extracted from selected studies. An appraisal will be done to determine the weight to be placed on each study. Extracted information will be used to critically appraise study quality and data will be synthesized to answer the review question(s).

Contextualization of findings will be done at this stage to understand the relevance of the findings for the South Asia region in general and Afghanistan and Myanmar in particular. Finally, the team will draw conclusions about the evidence, and also outline possibilities for future policy development in the sector, in consultation with policy makers, researchers, and practitioners.

### 2.2 ADVISORY GROUP INVOLVEMENT

The advisory group will be consulted at various stages of the review process to ensure that major interventions and policies are identified, and that the findings of the review are relevant for policy makers and other users of the review. Advisory group members will also be requested to help at the contextualization and dissemination stages of the review.

A brief profile of advisory group members is given in Appendix 2.1.

### 2.3 USER INVOLVEMENT

Potential users of the review include policy makers, practitioners, and researchers working on issues surrounding natural resource revenue management. More details on potential users are provided in Appendix 2.10. We hope to present findings which are relevant to these users, and their involvement

in the process will aid us in achieving this objective. We will reach out to researchers within TERI, as well as other sector experts to seek their inputs at various stages. Similarly, we will reach out to policy makers and practitioners through TERI's existing network, as well as that of the consortium (DFID, PwC and EPPI-Centre). Stakeholder meetings will be conducted with all three types of users.

We will attempt to involve users at various stages of the review process and will organization a dissemination workshop at the end of the review process. Some of the points during the review process where users can be engaged include at the stage of streamlining the scope of the review, during the review of the Stage II protocol, and at the stage of contextualization of key findings.

Dissemination of research findings among policy makers will be done through stakeholder interactions, events/workshops, publications including policy briefs and discussion papers targeted specifically at policy makers.

## 2.4 IDENTIFYING AND DESCRIBING STUDIES

### INCLUSION AND EXCLUSION CRITERIA

The inclusion and exclusion criteria in the systematic review have been organized according to the PICO framework ("Population, Intervention and/or phenomenon (e.g. types of revenue management policy etc.), Comparison, and Outcomes") for the study and language of the studies. The PICO framework is outlined in Appendix 2.2. The inclusion and exclusion criteria are listed in Appendix 2.3, with a list of countries studied in Appendix 2.4.

**Population:** We will focus on studies situated in the following countries:

1. Fragile, low and middle income countries
2. Resource rich countries

Thus, we will first make a list of countries which are both LMIC and politically fragile. Next we add those countries which are resource rich to this list. This ensures that countries which have managed to move out of poverty or fragility are also included and the set of countries covered in the review are beyond those where fragility could be cited as the reason for the intervention not working. Details for the selection of: (a) LMIC, (b) fragile, and (c) resource rich countries are provided below. The list of countries under each category is provided in Appendix 2.4.

**LMIC:** Our definition of low and middle income countries is based on the World Bank definition of low income countries as those with a per capita Gross National Income (GNI) of \$ 1,045 or less in 2014;

and middle income countries as those with a GNI per capita which is more than \$1,045 but less than \$12,736 in 2014.<sup>3</sup> High income countries will be excluded from the scope of the review.

**Fragile:** DFID's Fragile States and Regions List is used to classify countries as fragile.<sup>4</sup>

**Resource rich:** Our definition of resource rich countries is based on the International Monetary Fund's classification of countries as resource rich.<sup>5</sup>

**Interventions:** At the initial stages of searching we will include studies looking at a range of interventions. Interventions will be narrowed down based on availability of literature during Stage I of the review to include interventions of three kinds, relating to generation of revenue, allocation and distribution of revenue, and measures to improve transparency and accountability. The interventions may have been made at the national or sub-national level. Resource funds are included as an intervention under allocation and distribution of revenue in Stage I. In Stage II, if there is sufficient literature we will focus on resource funds as an intervention for mineral resource revenue management.

Some examples of interventions at the generation stage include competitive bidding, royalties, explicit rent taxes, production sharing, and equity sharing. Examples of interventions at the allocation and distribution stage include natural resource funds, direct transfers to citizens, and budgetary allocations to sectors / sub-national governments / regions. Finally, interventions to improve transparency and accountability include transparency in revenue management and rules and regulations, regular audits, legal sanctions against misuse of government funds, and independent regulatory bodies.

**Comparison:** Studies which make before and after comparisons relating to natural resource revenues interventions will be included. Studies which show differential effects across population groups (for example, class, gender, race, caste) will also be included.

**Outcomes:** The review will include studies which measure the impact of natural resource revenue methods on outcomes such as natural resource revenue and outputs, allocative efficiency, reporting practices, institutional and legal setting, transparency and accountability indicators, and controlling macroeconomic instability.

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<sup>3</sup>For more information on how the World Bank classifies countries, please see <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>. (last accessed April 29, 2016)

<sup>4</sup>For more information on DFID's Fragile State's List, please see: <http://icai.independent.gov.uk/wp-content/uploads/Fragile-States-ToRs-Final.pdf> (last accessed June 6, 2016).

<sup>5</sup>For more information on this, please see: <https://www.imf.org/external/np/pp/eng/2012/082412.pdf> (last accessed June 6, 2016)

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## SEARCH STRATEGY

To find relevant research to answer the review question, we will use a broad search strategy. The retrieved studies will then be screened to identify the core set of studies that give evidence on the effectiveness of selected intervention, and will be used to respond to the key research question - how can mineral resource revenue be managed effectively in resource rich, developing (low and middle income countries) countries experiencing politically fragile conditions?

A wide set of studies will be used to answer sub research questions - what are the various interventions available to countries to manage their natural resource revenues; to what extent have these interventions achieved their intended outcomes; and what are the key challenges in implementing these interventions in countries experiencing politically fragile conditions?

Main search terms are determined by the review questions, the inclusion criteria and from the studies identified in the scoping exercise stage. Search strings will be developed for each database using combinations of the main keywords and their synonyms which represent key aspects of the review. Boolean operators such as and, or, not will be used to further refine the search. We will also use truncation and wildcard operators for searching multiple forms of a search. The following sources will be used for search and retrieval of potential studies:

### **Electronic search of bibliographic databases**

A detailed search strategy for electronic databases will be developed using index terms and free texts terms. Search strings will be developed for each database using combinations of the main key terms and their synonyms which denote key aspects of the review. Key search terms and the list of subscribed and open access databases identified for searching are given in Appendix 2.5.

### **Reference to key websites**

One of the key challenges of this review will be to screen grey literature. A number of websites and portals will be searched using the search terms, and relevant documents will be imported for analysis to EPPI Reviewer 4. The details of websites are given in Appendix 2.5.

### **Hand search of key resources**

The documents obtained by accessing the library catalogues of TERI Library as well those of relevant libraries in the region will be hand searched.

### **Personal contacts and direct requests to key informants**

We will request experts within TERI and other institutes working on natural resources revenue management such as World Bank to identify any impact assessments and cost effectiveness studies that may have carried out within their programmes or widely referred to over the past decade.

## Reference management and screening procedures

A database system (supported by the software EPPI-Reviewer 4) will be set up to keep track of and manage studies found during the review. Titles and abstracts will be imported or entered manually into these databases.

## 2.5 APPROACH FOR STAGE I ANALYSIS (SCREENING, CODING, SCOPING)

### APPROACH FOR SCREENING STUDIES

Once studies are identified through the search strategy which considers the exclusion criteria, titles and abstracts will be screened to exclude those which do not meet the inclusion criteria. This will be done by two researchers, and in case of disagreement on the inclusion of a study, a third reviewer will decide if the study should be included. Where abstracts do not provide adequate information, the full text of the study will be obtained and screened, following the same procedure.

### APPROACH FOR CODING OF INCLUDED STUDIES

The purpose of coding will be to understand the key characteristics of available literature. For example, to understand how many studies examine natural resource funds (intervention), or how many are based in a particular region of the world (location of study).

A coding exercise will be done for selected studies to ensure that all team members understand codes in a similar fashion. Coding will then be done by team members independently. EPPI reviewer 4.0 will be used to classify searchers and categorize data.

Some categories for coding will include:

- Type of document: Article in peer reviewed journal, article in non-peer reviewed journal, grey literature including documents of international agencies.
- Study aim
- Country: country or countries studied
- Type of intervention: for example, royalties, explicit rent taxes, resource funds, and direct transfers to citizens, etc.
- Study design: Qualitative, Quantitative and Mixed  
Qualitative study designs include; (a) those investigating acceptability and feasibility of interventions; (b) those investigating the implementation. The mechanisms include interviews, surveys, case studies, oral histories and process evaluations.  
Quantitative study design refers to; (a) those assessing harm or causation; (b) impact assessing studies. It comprises of cohort studies, case control studies, cross section survey, RCTs, quasi experimental studies and interrupted time series designs.

In the context of our research question and topic, there could be lack of quantitative analysis: due to the lack of clarity in determining what the impact variable is about (e.g. processes or outcomes) and due to lack of systematic data to capture project interventions (e.g. number of beneficiaries, allocation of funds, etc.). What may be more common are evaluations that include impact assessments made through qualitative assessments, in particular expert interviews with key stakeholders

- Outcomes: Natural resource revenue and outputs, Allocative efficiency, Reporting practices, Institutional and legal setting, Transparency and accountability indicators and Controlling macroeconomic instability.

A coding sheet (for stage I) is included in Appendix 2.6.

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## APPROACH FOR SCOPING EXERCISE

Scoping results will be used to determine whether we can focus on natural resource funds in Stage II of the review. The purpose of the scoping exercise will be to map key concepts, available data, as well as literature gaps related to natural resource revenue management.

## 2.6 APPROACH FOR STAGE II ANALYSIS

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### APPROACH FOR DATA EXTRACTION

Through data extraction forms, information will be systematically collected on general description of studies, the results of the studies, as well as on study designs, to allow reviewers to assess the quality of the study. Both, quantitative (numeric) and qualitative (free text, narrative) data will be collected from studies. Data extraction forms will be developed by two reviewers, and finalized after discussion with the whole review group.

A data extraction sheet (for stage II) is included in at the end of the document.

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### APPROACH FOR ASSESSING QUALITY OF STUDIES AND WEIGHT OF EVIDENCE FOR THE REVIEW QUESTION

Each study will be screened by two reviewers independently at the title and abstract screening stage to determine whether it should be included in the review. In case of disagreement, a third reviewer will be brought in and a collective decision will be taken on whether to include the study.

A coding tool has been created using the Cochrane Risk of Bias tool and the Critical Skills Appraisal Programme (CASP) tool for quality appraisal of quantitative and qualitative studies respectively. The quality assurance tool is given in Appendix 2.7

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## APPROACH FOR SYNTHESIS OF EVIDENCE

Since we will include both qualitative and quantitative studies in the review, studies may be heterogeneous in which case we will do a narrative synthesis. Alternatively, we will attempt statistical synthesis of quantitative data and a narrative synthesis of qualitative data and examine similarities and differences in key findings from both sets of analyses. A narrative synthesis of quantitative data may also be done in case it does not allow for statistical synthesis.

### 2.7 QUALITY ASSURANCE PROCESS

Two steps will be followed for screening. In the first step screening will be at the title and abstract level, which will be done by two reviewers independently. Disagreements will be resolved by a third reviewer. Full text screening will be done in case abstracts do not provide adequate information. The rationale for the inclusion of the study will be clearly stated. Similarly, coding and data extraction forms will be created by two reviewers working independently and collated after discussion with a third member of the review group.

As mentioned in Section 2.6.2, at the time of assessing the quality of studies to decide whether to include them in the final review for synthesis, a quality assessment tool created using the Cochrane Risk of Bias tool and the Critical Skills Appraisal Programme (CASP) tool will be used.

Advisory group members as well as other sector experts from TERI will be consulted at various key stages of the review, and all documents will be reviewed internally by the team as well as by other researchers working on related areas.

### 2.8 CONTEXTUALIZATION

The review will examine natural resource revenue management practices in all low and middle income countries experiencing fragile conditions. There is, for example, a large amount of literature on resource rich countries in the Latin American and African regions. However, the focus of the review will be to understand the relevance of these studies for the South Asian region, and Afghanistan and Myanmar in particular.

The focus on Afghanistan stems from the fact that in 2010, large mineral deposits were discovered in the country, and the appropriate management of revenue generated from these resources could augment socio-economic growth in the country. In 2013, Afghanistan ranked 49 out of 58 countries in NRGi's Resource Governance Index. While it has a mining legislation which is comprehensive and an independent licensing process, key challenges to effective natural resource revenue management include lack of data and lack of regular reporting, and low regulatory oversight over the licensing process as well as state owned entities. In addition, factors such as corruption, lawlessness, weak

democratic institutions and low accountability impede effective revenue management in the country (NRGI 2013).

In Myanmar, which is one of South Asia’s most resource rich countries, there is limited transparency on the manner in which revenues earned from natural resource extraction are spent. Myanmar ranked last out of 58 countries in NRGI’s 2013 Resource Governance Index. This was because it performed poorly on all four criteria used in the Index, namely institutional and legal setting, reporting practices, safeguards and quality controls, and enabling environment. For example, according to the Index, there is limited information on which authority would receive payments from extractive industries, and the natural resource law does not describe the licensing process or the role of government authorities. There is no information on revenue from extraction provided by either the Finance Ministry or the Energy Ministry, and changes in fiscal policy are sudden and unpredictable.

While contextualization will be done towards the end of the study, reviewers will map out current policy contexts in Afghanistan and Myanmar relating to natural resource revenue management. This will help us focus on relevant information at the data extraction and synthesis stages.

## 2.9 REPORT WRITING AND DRAWING POLICY MESSAGES

The report will be divided into the following sections: (i) introduction, (ii) methodology, (iii) synthesis and analysis, (iv) contextualization, and (v) implications for policy, programming and future research.

Section	Author
Introduction	Joyita Ghose
Methodology	Nitish Arora (with inputs from N Deepa and Reeta Sharma)
Synthesis and analysis section	Shilpi Kapur, G Mini, Souvik Bhattacharjya, Nitish Arora, Joyita Ghose
Contextualization	Joyita Ghose, Nitish Arora
Implications for policy, programming and future research	Shilpi Kapur

The report will also include an executive summary, which can be used as a standalone document with an overview of the key findings. In addition, a presentation will be prepared on key findings which can be shared with advisory group members and stakeholders.

Other communication materials will include policy briefs, journal articles, commentaries, and blogs. These will be prepared through the course of conducting the systematic review. Implications for policy, practice, and research will be drawn out through discussions within the review group, discussions with the advisory group, as well as other sector experts and practitioners.



## 2.10 DISSEMINATION

Research will be disseminated to key stakeholders including policy makers, practitioners, and researchers from different countries in the South Asian region through Policy briefs (2-3) and Discussion paper (1-2), newspaper articles, and stakeholder consultations. To be able to identify these key stakeholders from the countries other than India, we will use our networks and partnerships in these countries.

A dissemination workshop will also be organized at the end of the project, where the findings from the Systematic Review, including implications for policy and practise and implications for further research will be presented. In this dissemination workshop, attempt will be made to have participation from atleast 2-3 key stakeholders from countries in the South Asian region, particularly if possible from Myanmar and Afghanistan. We will also identify people in India who work on policy issues for countries in the South Asian region and they will be invited to this workshop.

Additionally, the protocol document and the technical systematic review report will also be shared with the stakeholders. The technical systematic review report will be uploaded on TERI's website and also shared through email with our networks and partners.

There would be dedicated Lecture session on the Findings from the Systematic Review in TERI's ITEC course on "Natural Resource Security: Governance, Challenges and Opportunities". This course (along with 7 other courses) is part of TERI's collaboration with the Ministry of External Affairs, Government of India under the South-South Cooperation and is organized every year for mid-career professionals (government, Academia and NGO sector) from developing countries across the world.

Key users have been identified in Appendix 2.10. The emphasis will be on preparing easy to understand documents that clearly outline the context, major findings, and recommendations which arise from the review.

Since stakeholders will be consulted at various stages of the review process, we will use stakeholder networks at the time of dissemination to ensure that research findings are shared with key users.

## 2.11 TIMETABLE

Table 1 provides detailed timeline for the project.

**Table 1: Time table**

Tasks	Start date	End date	Duration (days)
Title Registration	28-Mar-16	11-Apr-16	14
Preparation of Preliminary Protocol	28-Mar-16	12-May-16	45
Protocol review and revision	12-May-16	7-Jul-16	56
Stage I: Streamlining review scope based on availability of existing evidence	2-Jun-16	16-Aug-16	75
Preparation of stage II protocol	1-Aug-16	31-Aug-16	30
Stage II Protocol review& revision	31-Aug-16	12-Oct-16	42
Presentation of stage II protocol	7-Sep-16	7-Sep-16	
Stage II start: Data extraction	15-Sep-16	15-Oct-16	30
Appraisal	10-Oct-16	21-Nov-16	42
Synthesise	16-Nov-16	28-Dec-16	42
Contextualisation	23-Dec- 16	22-Jan-17	30
Preparation of draft report and summary	17-Jan- 17	16-Feb-17	30
review and revision of draft SR report with contextualisation and SR summary	16-Feb-17	27-Apr-17	70
Dissemination	27-Apr-17	18-May-17	21
Finalising SR report	18-May-17	28-May-17	10

Total duration of SR (Days)	426
Total duration of SR (Months)	14

Please refer to Appendix 2.9 for detailed timetable

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## APPENDIX 2.1: AUTHORSHIP OF THE REPORT

### **The authors of this report are:**

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### **Acknowledgments**

The authors gratefully acknowledge the advice and feedback received from the Advisory Group comprising of Dr Prodipto Ghose, Distinguished Fellow and Director, TERI, and Mr S Vijay Kumar, Distinguished Fellow, TERI.

The authors are also thankful to EPPI-Centre and LIRNEasia for providing quality assurance support and capacity building support and PwC for providing programme management support. The authors would also like to thank DFID's South Asia Research Hub (SARH) and DFID advisors for their feedback and advisory support from time to time.

### **Contributions**

The opinions expressed in this publication are not necessarily those of the UK Department for International Development, PwC, the EPPI-Centre, LIRNEasia or [name of the lead institution doing the review, e.g. TERI]. Responsibility for the views expressed remains solely with the authors.

### **Citation**

This report should be cited as: Ghose J, Kapur S, Arora N, Sharma R, Deepa N, Govindan M (2016) Natural Resource Revenue Management In Low And Middle Income Countries Experiencing Politically Fragile Conditions : A Systematic Review. Preliminary Protocol. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London.

### **Conflicts of interest**

There were no conflicts of interest in the writing of this report.

### **Funding**

This is an independent report commissioned and funded by the Research and Evidence Division in the Department for International Development. This material has been funded by UK aid from the UK Government; however, the views expressed do not necessarily reflect the UK Government's official policies.

APPENDIX 2.2: POPULATION, INTERVENTION, COMPARISONS AND OUTCOMES  
(PICOS)

<b>Language</b>	<ul style="list-style-type: none"> <li>▪ English</li> </ul>
<b>Time Period</b>	<ul style="list-style-type: none"> <li>▪ All time periods</li> </ul>
<b>Population (or Phenomenon or Geographical coverage)</b>	<ul style="list-style-type: none"> <li>▪ Low and middle income countries experiencing political instability (as defined by the Fragile States Index) AND Natural resource rich countries Implementing NRRM policies (either by governments at the national / sub-national level or by private companies)</li> </ul>
<b>Intervention</b>	<p><i>Revenue management through:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Generation</i></li> </ul> <p>Competitive bidding; Royalties; Explicit rent taxes; Production sharing; Equity sharing)</p> <ul style="list-style-type: none"> <li>▪ <i>Allocation and distribution</i></li> </ul> <p>Resource funds; Direct transfers to citizens; Budget allocation to specific sectors or sub national governments or regions.</p> <ul style="list-style-type: none"> <li>▪ <i>Transparency and accountability</i></li> </ul> <p>Transparency in rules and revenue management processes; Regular auditing; Independent regulators; Effective legal sanctions</p>
<b>Comparison</b>	<ul style="list-style-type: none"> <li>▪ Countries which have governance mechanisms for NRRM and those which do not</li> <li>▪ Before and after: Changes in revenue and other outcomes after a country introduces a new governance mechanism for NRRM</li> </ul>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>▪ Natural resource revenue and outputs</li> <li>▪ Allocative efficiency</li> <li>▪ Reporting practices</li> <li>▪ Institutional and legal setting</li> <li>▪ Transparency and accountability indicators</li> <li>▪ Controlling macroeconomic instability</li> </ul>
<b>Study Designs</b>	<ul style="list-style-type: none"> <li>▪ All study designs</li> </ul>



## APPENDIX 2.3: INCLUSION AND EXCLUSION CRITERIA

### (A) Title and abstract screening (with full text used as needed)

Language	Available in English?	Yes →Continue No →Exclude
Date of Publication	Include all	-
Population	Does the study concern one or more countries listed in Appendix 2.1 as Low and middle income countries which are considered Fragile Or any country which is rich in natural resources	Yes or maybe →Continue No →Exclude
Intervention	Does the study investigate or assess interventions related to natural resource revenue management (NRRM) through Generation, Allocation and distribution, Transparency and accountability or Other, at the national or sub-national level	Yes or maybe →Include No →Exclude
Comparison	Include all	-
Outcome	Include all	-
Study Design	Include all	-

**List of countries selected:** Afghanistan, Albania, Algeria, Angola, Azerbaijan, Bahrain, Bangladesh, Belarus, Bolivia, Botswana, Brunei Darusalam, Burundi, Cambodia, Cameroon, Central African Republic, Chad, Chile, Colombia, Congo, Dem. Rep. Congo, Rep. Côte D'Ivoire, Djibouti, Ecuador, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Ghana Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Indonesia, Iran, Islamic Rep., Iraq, Kazakhstan, Kenya, Korea, Dem. People's Rep., Kyrgyz Republic, Lao, Lebanon, Liberia, Libya, Madagascar, Mali, Mauritania, Mexico, Mongolia, Mozambique, Myanmar, Nepal, Niger, Nigeria, Norway, Oman, Pakistan, Papua New Guinea, Paraguay, Peru, Qatar, Russia, São Tome and Principe, Saudi Arabia, Sierra Leone, Somalia, South Sudan, Sudan, Suriname, Syria Arab Republic, Tajikistan, Tanzania, Timor-Leste, Togo, Trinidad and Tobago, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uzbekistan, Venezuela, Vietnam, Yemen, Rep. Zambia, Zimbabwe

### (B) Full-text screening

Full text screening will be done for those articles where abstracts do not provide sufficient information to determine inclusion or exclusion.

## APPENDIX 2.4: INCLUDED COUNTRIES

LMIC countries which are identified as Fragile<sup>6</sup> or countries which are considered resource rich<sup>7</sup> are selected. India is an exception India is included as it is a significant country in terms of its size, comparative economic might, and historical and cultural relevance to the region. Also since the contextualization in the Systematic Review has to be done for the South Asian Region, particularly Afghanistan and Myanmar, it makes sense to include all countries of the South Asian region. It is also important to note here that there are many geographic regions in India or States which are resource rich (as measured in terms of the contribution of export earnings from mineral resources) and are bigger than most of the countries identified using the criteria of LMIC+ fragile and resource rich

Country	Income Group	Fragility	Resource Rich	Selected?
Afghanistan	LIC	High Fragility	Yes	Yes
Albania	UMIC	-	Yes	Yes
Algeria	UMIC	-	Yes	Yes
American Samoa	UMIC	-	-	No
Andorra	HIC	-	-	No
Angola	UMIC	Moderate	Yes	Yes
Antigua and Barbuda	HIC	-	-	No
Argentina	HIC	-	-	No
Armenia	LMIC	-	-	No
Aruba	HIC	-	-	No
Australia	HIC	-	-	No
Austria	HIC	-	-	No
Azerbaijan	UMIC	Moderate	Yes	Yes

<sup>6</sup> <http://devinit.org/?dialogFeatures=protocol=http#!/post/does-dfids-new-fragile-states-list-point-towards-a-shift-in-funding-allocation> (last accessed June 27, 2016).

<sup>7</sup> <https://www.imf.org/external/np/pp/eng/2012/082412.pdf> (last accessed June 6, 2016)

Country	Income Group	Fragility	Resource Rich	Selected?
Bahamas, The	HIC	-	-	No
Bahrain	HIC	-	Yes	Yes
Bangladesh	LMIC	Moderate	-	Yes
Barbados	HIC	-	-	No
Belarus	UMIC	Low Fragility	-	Yes
Belgium	HIC	-	-	No
Belize	UMIC	-	-	No
Benin	LIC	-	-	No
Bermuda	HIC	-	-	No
Bhutan	LMIC	-	-	No
Bolivia	LMIC	-	Yes	Yes
Bosnia and	UMIC	-	-	No
Botswana	UMIC	-	Yes	Yes
Brazil	UMIC	-	-	No
Brunei Darusalam	HIC	-	Yes	Yes
Bulgaria	UMIC	-	-	No
Burkina Faso	LIC	-	-	No
Burundi	LIC	High Fragility	-	Yes
Cabo Verde	LMIC	-	-	No
Cambodia	LIC	Low Fragility	-	Yes
Cameroon	LMIC	Low Fragility	Yes	Yes
Canada	HIC	-	-	No
Cayman Islands	HIC	-	-	No

Country	Income Group	Fragility	Resource Rich	Selected?
Central African	LIC	High Fragility	Yes	Yes
Chad	LIC	High Fragility	Yes	Yes
Channel Islands	HIC	-	-	No
Chile	HIC	-	Yes	Yes
China	UMIC	-	-	No
Colombia	UMIC	Low Fragility	-	Yes
Comoros	LIC	-	-	No
Congo, Dem. Rep	LIC	High Fragility	Yes	Yes
Congo, Rep. of	LMIC	Low Fragility	Yes	Yes
Costa Rica	UMIC	-	-	No
Côte d'Ivoire	LMIC	Low Fragility	Yes	Yes
Croatia	HIC	-	-	No
Cuba	UMIC	-	-	No
Curaçao	HIC	-	-	No
Cyprus	HIC	-	-	No
Czech Republic	HIC	-	-	No
Denmark	HIC	-	-	No
Djibouti	LMIC	Low Fragility	-	Yes
Dominica	UMIC	-	-	No
Dominican Republic	UMIC	-	-	No
Ecuador	UMIC	-	Yes	Yes
Egypt, Arab Rep.	LMIC	Moderate	-	Yes
El Salvador	LMIC	-	-	No

Country	Income Group	Fragility	Resource Rich	Selected?
Eritrea	LIC	High Fragility	-	Yes
Estonia	HIC	-	-	No
Ethiopia	LIC	Moderate	-	Yes
Equatorial Guinea	HIC	-	Yes	Yes
Faroe Islands	HIC	-	-	No
Fiji	UMIC	-	-	No
Finland	HIC	-	-	No
France	HIC	-	-	No
French Polynesia	HIC	-	-	No
Gabon	UMIC	-	Yes	Yes
Gambia, The	LIC	-	-	No
Georgia	LMIC	-	-	No
Germany	HIC	-	-	No
Ghana	LMIC	-	Yes	Yes
Greece	HIC	-	-	No
Greenland	HIC	-	-	No
Grenada	UMIC	-	-	No
Guam	HIC	-	-	No
Guatemala	LMIC	-	Yes	Yes
Guinea	LIC	Moderate	Yes	Yes
Guinea-Bissau	LIC	Moderate	-	Yes
Guyana	LMIC	-	Yes	Yes
Haiti	LIC	Moderate	-	Yes

Country	Income Group	Fragility	Resource Rich	Selected?
Honduras	LMIC	Low Fragility	-	Yes
Hong Kong SAR,	HIC	-	-	No
<b>Hungary</b>	HIC	-	-	No
Iceland	HIC	-	-	No
India	LMIC	-	-	No
Indonesia	LMIC	-	Yes	Yes
Iran, Islamic Rep.	UMIC	High Fragility	Yes	Yes
Iraq	UMIC	High Fragility	Yes	Yes
Ireland	HIC	-	-	No
Isle of Man	HIC	-	-	No
Israel	HIC	-	-	No
Italy	HIC	-	-	No
Jamaica	UMIC	-	-	No
Japan	HIC	-	-	No
Jordan	UMIC	-	-	No
Kazakhstan	UMIC	-	Yes	Yes
Kenya	LMIC	Moderate	-	Yes
Kiribati	LMIC	-	-	No
Korea, Dem. People's	LIC	High Fragility	-	Yes
Korea, Rep.	HIC	-	-	No
Kosovo	LMIC	-	-	No
Kuwait	HIC	-	-	No
Kyrgyz Republic	LMIC	Moderate	Yes	Yes

Country	Income Group	Fragility	Resource Rich	Selected?
Lao PDR	LMIC	-	Yes	Yes
Latvia	HIC	-	-	No
Lebanon	UMIC	Moderate	-	Yes
Lesotho	LMIC	-	-	No
Liberia	LIC	Low Fragility	Yes	Yes
Libya	UMIC	High Fragility	Yes	Yes
Liechtenstein	HIC	-	-	No
Lithuania	HIC	-	-	No
Luxembourg	HIC	-	-	No
Macao SAR, China	HIC	-	-	No
Macedonia, FYR	UMIC	-	-	No
Madagascar	LIC	Low Fragility	Yes	Yes
Malawi	LIC	-	-	No
Malaysia	UMIC	-	-	No
Maldives	UMIC	-	-	No
Mali	LIC	Moderate	Yes	Yes
Malta	HIC	-	-	No
Marshall Islands	UMIC	-	-	No
Mauritania	LMIC	Low Fragility	Yes	Yes
Mauritius	UMIC	-	-	No
Mexico	UMIC	-	Yes	Yes
Micronesia, Fed. Sts.	LMIC	-	-	No
Monaco	HIC	-	-	No

Country	Income Group	Fragility	Resource Rich	Selected?
Moldova	LMIC	-	-	No
Mongolia	UMIC	-	Yes	Yes
Montenegro	UMIC	-	-	No
Morocco	LMIC	-	-	No
Mozambique	LIC	-	Yes	Yes
Myanmar	LMIC	High Fragility	-	Yes
Namibia	UMIC	-	-	No
Nepal	LIC	Low Fragility	-	Yes
Netherlands	HIC	-	-	No
New Caledonia	HIC	-	-	No
New Zealand	HIC	-	-	No
Nicaragua	LMIC	-	-	No
Niger	LIC	Low Fragility	Yes	Yes
Nigeria	LMIC	Moderate	Yes	Yes
Northern Mariana	HIC	-	-	No
Norway	HIC	-	Yes	Yes
Oman	HIC	-	Yes	Yes
Pakistan	LMIC	High Fragility	-	Yes
Palau	UMIC	-	-	No
Panama	UMIC	-	-	No
Papua New Guinea	LMIC	-	Yes	Yes
Paraguay	UMIC	Low Fragility	-	Yes
Peru	UMIC	-	Yes	Yes



Country	Income Group	Fragility	Resource Rich	Selected?
Philippines	LMIC	-	-	No
Poland	HIC	-	-	No
Portugal	HIC	-	-	No
Puerto Rico	HIC	-	-	No
Qatar	HIC	-	Yes	Yes
Romania	UMIC	-	-	No
Russian Federation	HIC	-	Yes	Yes
Rwanda	LIC	-	-	No
Samoa	LMIC	-	-	No
San Marino	HIC	-	-	No
São Tomé and	LMIC	-	Yes	Yes
Saudi Arabia	HIC	-	Yes	Yes
Senegal	LMIC	-	-	No
Serbia	UMIC	-	-	No
<b>Seychelles</b>	HIC	-	-	No
Sierra Leone	LIC	Low Fragility	Yes	Yes
Singapore	HIC	-	-	No
Sint Maarten (Dutch	HIC	-	-	No
Slovak Republic	HIC	-	-	No
Slovenia	HIC	-	-	No
Solomon Islands	LMIC	-	-	No
Somalia	LIC	High Fragility	-	Yes
South Africa	UMIC	-	-	No

Country	Income Group	Fragility	Resource Rich	Selected?
South Sudan	LIC	High Fragility	-	Yes
Spain	HIC	-	-	No
Sri Lanka	LMIC	-	-	No
St. Kitts and Nevis	HIC	-	-	No
St. Lucia	UMIC	-	-	No
St. Martin (French	HIC	-	-	No
St. Vincent and the	UMIC	-	-	No
Sudan	LMIC	High Fragility	Yes	Yes
Suriname	UMIC	-	Yes	Yes
Swaziland	LMIC	-	-	No
Sweden	HIC	-	-	No
Switzerland	HIC	-	-	No
Syrian Arab Republic	LMIC	High Fragility	Yes	
Taiwan, China	HIC	-	-	No
Tajikistan	LMIC	Moderate	-	Yes
Tanzania	LIC	-	Yes	Yes
Thailand	UMIC	-	-	No
Timor-Leste	LMIC	Low Fragility	Yes	Yes
Togo	LIC	-	Yes	Yes
Tonga	UMIC	-	-	No
Trinidad and Tobago	HIC	-	Yes	Yes
Tunisia	UMIC	-	-	No
Turkey	UMIC	-	-	No

Country	Income Group	Fragility	Resource Rich	Selected?
Turks and Caicos	HIC	-	-	No
Turkmenistan	UMIC	Moderate	Yes	Yes
Tuvalu	UMIC	-	-	No
Uganda	LIC	Low Fragility	Yes	Yes
Ukraine	LMIC	Low Fragility	-	Yes
United Arab Emirates	HIC	-	Yes	Yes
United Kingdom	HIC	-	-	No
United States	HIC	-	-	No
Uruguay	HIC	-	-	No
Uzbekistan	LMIC	Moderate	Yes	Yes
Vanuatu	LMIC	-	-	No
Venezuela, RB	HIC	Moderate	Yes	Yes
Vietnam	LMIC	-	Yes	Yes
Virgin Islands (U.S.)	HIC	-	-	No
West Bank and Gaza	LMIC	-	-	No
Yemen, Rep.	LMIC	High Fragility	Yes	Yes
Zambia	LMIC	-	Yes	Yes
Zimbabwe	LIC	Moderate	-	Yes

## APPENDIX 2.5: SEARCH STRATEGY FOR ELECTRONIC DATABASES AND WEBSITES

1	EconLit ( <a href="https://www.ebscohost.com/academic/econlit">https://www.ebscohost.com/academic/econlit</a> )
2	International Bibliography of the Social Sciences (IBSS) (1951 - current) ( <a href="http://search.proquest.com/ibss">http://search.proquest.com/ibss</a> )
3	PAIS Index (1914 - current) ( <a href="http://search.proquest.com/pais">http://search.proquest.com/pais</a> )
4	GEOBASE <a href="http://www.engineeringvillage.com">www.engineeringvillage.com</a>
5	GeoRef <a href="http://www.engineeringvillage.com">www.engineeringvillage.com</a>
6	Political Science Complete ( <a href="https://www.ebscohost.com/academic/political-science-complete">https://www.ebscohost.com/academic/political-science-complete</a> )
7	World Politics Review : ( <a href="https://www.ebscohost.com/">https://www.ebscohost.com/</a> )
8	SocINDEX ( <a href="https://www.ebscohost.com/academic/socindex-with-full-text">https://www.ebscohost.com/academic/socindex-with-full-text</a> )
9	World bank group e-library ( <a href="http://elibrary.worldbank.org/action/doSearch?displaySummary=true&amp;startPage=0&amp;target=default&amp;t">http://elibrary.worldbank.org/action/doSearch?displaySummary=true&amp;startPage=0&amp;target=default&amp;t</a> )
10	ScienceDirect ( <a href="http://www.sciencedirect.com/">http://www.sciencedirect.com/</a> )
11	Jstor ( <a href="http://www.jstor.org">www.jstor.org</a> )
12	Social Science Research Network ( <a href="http://www.ssrn.com/">http://www.ssrn.com/</a> )
13	Web of Science ( <a href="http://www.webofknowledge.com/">www.webofknowledge.com/</a> )
14	Ideas repec ( <a href="https://ideas.repec.org/">https://ideas.repec.org/</a> )

### Websites

Websites of international agencies and consortium working in the field of international development	UNESDOC, United Nations Economic Commission for Africa, World Bank, International Monetary Fund
Websites of development agencies	IDRC, u4. OECD, Asian Development Bank, Africa Development Bank
Websites of development think tanks and research institutes	National Bureau of Economic Research , ELDIS, Anti-corruption Research Network, Evidence and Lesson from Latin America, GNet
Other sources of digital open access resources	Google Scholar, ResearchGate, OAlster

## Keywords

Natural resource	<u>AND</u>	Revenue management	<u>AND</u>	Fragile country
Mineral		Mining royalty		Low income country
Metal		Mineral royalty		Lower middle income country
Coal		Mining tax		Upper middle income country
Oil		Sovereign wealth fund (SWF)		Low and middle income country (LMIC)
Gas		Direct cash transfer		<i>Specific countries to be identified (Listed in APPENDIX 2.3)</i>
Petroleum		Resource funds		Note: Resources rich is included in column 2
Fossil fuel		Resources rich		
Gasoline		Resources revenue		
Mining		Resources asset		
Biofuels		Resources Nationalism		
		Welfare fund		
		Government bond		
		Sovereign bond		
		Stabilization funds		
		Savings funds		
		Development funds		
		Resource curse		
		Dutch disease		

(To combine keywords in each row with OR)

**Search strategy used for database: International Bibliography of the Social Sciences**

Search ID	Search combinations	Result *
S1	AB,TI("natural resource*" OR mineral* OR metal* OR coal OR oil OR gas* OR petrol* OR "fossil fuel*" OR mining OR biofuel*)	37937
S2	AB,TI(revenue management OR mining royalty OR mineral royalty OR mining tax* OR "sovereign wealth fund*" OR "SWF" OR "Direct cash transfer" OR resource fund* OR resource revenue* OR Resource asset* OR "resource nationalism" OR "welfare fund*" OR "government bond*" OR "sovereign bond*" OR "stabilization fund*" OR "savings fund*" OR "development fund*" OR "resource curse*" OR "dutch disease*")	7296
S3	AB,TI(afghanistan OR albania OR algeria OR angola OR azerbaijan OR bahrain OR bangladesh OR belarus OR bolivia OR botswana OR bruneidarusalam OR burundi OR cambodia OR cameron OR central african republic OR chad OR chile OR colombia OR congo OR djibouti OR ecuador OR egypt OR equatorial guinea OR eritrea OR ethiopia OR gabon OR ghana OR guatemala OR ORguyana OR haiti OR honduras OR indonesia OR iran OR iraq OR kazakhstan OR kenya OR kORea OR kyrgyz OR lao OR lebanon OR liberia OR libya OR madagascar OR mali OR mauritania OR mexico OR mongolia OR mozambique OR myanmar OR nepal OR niger OR nigeria OR norway OR oman OR pakistan OR papua new guinea OR paraguay OR peru OR qatar OR russia OR saudi Arabia OR sierra leone OR somalia OR south sudan OR sudan OR suriname OR syria arab republic OR tajikistan OR tanzania OR timorleste OR togo OR trinidad OR tobago OR turkmenistan OR uganda OR ukraine OR united arab emirates OR uzbekistan OR venezuela OR vietnam OR yemen OR zambia OR zimbabwe OR guinean-bissau OR são tome OR coted'ivoire OR "fragile countr*" OR "fragile state*" OR "fragile nation*" OR "fragile government*" OR "low income countr*" OR "lower middle income countr*" OR "upper middle income countr*" OR "LMIC*")	176,021
S4	(S1 AND S2 AND S3)	<b>420</b>
S5	(S1 AND S2)	<b>1341</b>

\* Note. Date of search is 2 June 2016

APPENDIX 2.6: DATA CODING TOOL - SCOPING

<b>Study ID</b>	Name of authors, year of publication	
<b>Type of document</b>	Journal article; Organizational report (Government, NGO, IGOs and Other), Independent research report, Master or doctoral thesis, Other	
<b>Year of publication</b>	Year of publication	
<b>Aim of study</b>	Investigate acceptance, feasibility or implementation of the Intervention / Assess Cause or Harm / Assess impact / Other	
<b>Country/Region</b>	Please specify	
<b>Population</b>	Highly fragile/Fragile/moderately Fragile/not Fragile Resource rich/Not resource rich	
<b>Intervention</b>	What is the intervention?	Describe the intervention in detail
	Formal name of the intervention?	Name if stated OR Not stated/Unclear/Not applicable
	Type of NRRM intervention	Generation Allocation and distribution Transparency and accountability Other (specify in all 4 cases) Unclear
<b>Outcome</b>	What are the types of outcomes?	<ul style="list-style-type: none"> <li>▪ Natural resource revenue and outputs</li> <li>▪ Allocative efficiency</li> <li>▪ Reporting practices</li> <li>▪ Institutional and legal setting</li> <li>▪ Transparency and accountability indicators</li> <li>▪ Controlling macroeconomic instability</li> </ul>
<b>Outcome Indicator</b>	Please specify the outcome indicator or (quantitatively or qualitatively) measurable indicator being looked at in the study	Production volumes, production value, share of government in natural resource revenues generated, subsidies, returns on private investment in natural resource sector, taxes and royalties paid by mining companies to government, returns on natural resource funds; Sharing of natural resource revenue with sub-national governments, transfer of revenue to natural resource funds, direct transfer to citizens, petroleum subsidies, Environmental and social impact assessments, Exploration data, Comprehensive reporting by State Owned Companies, Comprehensive fund reports, Comprehensive subnational transfer reports; Comprehensive sector legislation, Extractive Industries Transparency Initiative (EITI) participation; Clarity in revenue collection; Fund rules defined in law, Subnational transfer rules defined in law; Checks on licensing process, Checks on budgetary process, Government

		disclosure of conflicts of interest, Reports of State Owned Companies (SOC) audited, Fund reports audited, Checks on fund spending, corruption in natural resource management; Others
<b>Study design<sup>8</sup></b>	What are the study designs?	Quantitative/Qualitative/Mixed OR Descriptive <sup>9</sup> /Comparative-Observational <sup>10</sup> /Comparative-Experimental <sup>11</sup>

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<sup>8</sup> The Descriptive, Comparative-Observational and Comparative-Experimental categorization of study designs is from the Cochrane Library Publication

<sup>9</sup> Interviews/surveys; Case studies; Oral histories); Process evaluations of feasibility and acceptability; Other qualitative or mixed methods research studies

<sup>10</sup> Cohort studies; Case control studies; Cross-sectional surveys

<sup>11</sup> Randomized controlled trials; Quasi-experimental studies with a known allocation rule (e.g. regression discontinuity design and natural experiments); Quasi-experimental studies with a comparison group using some methods to control for confounding (such as difference-in-differences estimation, instrumental variables estimation, statistical matching, etc.); Interrupted time series designs



## APPENDIX 2.7: DATA CODING AND EXTRACTION TOOL - ASSESSING QUALITY OF STUDIES

This tool was derived using the criteria in the Quality Assessment Tool and the criteria given by the Natural Resources SR team in their draft protocol. Needs to improved and edited,

	Appraisal Criteria	Data to be extracted	Reviewer Judgement	Details of judgement
General	1. Was there a clear statement of the aims of research? Are the aims of the study clearly reported?	Aim	Yes / No	
	Is the context adequately described?	Context	Yes / No	
	7. Have ethical issues been taken into consideration?	Ethical issues	Yes / No	
	Were potential users of the research appropriately involved in the design or conduct of the study?	User involvement	Yes, many/Yes, to a limited extent/No	
Study design	3. Was the research design appropriate to address the aims of the research? Was the choice of research design appropriate for addressing the research question(s)? 2. Is a qualitative methodology appropriate?	Research design	Yes / No	
	To what extent are research design methods able to rule out any sources of error or bias?	Extract as appropriate	A lot/A little/Not at all	
RoB	6. Has the relationship between the research and the participants been adequately considered?	Extract as appropriate	Yes/No	
	Do authors avoid select reporting bias?	Extract as appropriate	Yes / No	
Data Collection	5. Was data collected in a way that addressed the research issue?	Extract as appropriate		
	Who collected the data?	Extract as appropriate	Details	
	Main types of data collected	Extract as appropriate	Details	
	Methods used to collect data	Extract as appropriate	Details	
	Details of data collection tools	Extract as appropriate	Explicitly stated/Implicit/Unclear	
	Do authors address way in which they addressed reliability of data collection?	Extract as appropriate	Details	
	Do authors describe how they address the validity of their data collection tools?	Extract as appropriate	Details	
	Is there an adequate description of the data collection methods?	Extract as appropriate	Yes / No	

	Have sufficient attempts been made to establish the repeatability or reliability of data collection methods?	Extract as appropriate	Yes, a good attempt/Yes, to some extent/No	
	Have sufficient attempts been made to establish validity of data collection tools?	Extract as appropriate	Yes, a good attempt/Yes, to some extent/No	
Data analysis	8. Was the data analysis sufficiently rigorous?	Extract as appropriate		
	Which methods were used to analyse data?	Extract as appropriate	Explicitly stated/Implicit/Unclear	
	Any important statistical issues	Extract as appropriate	Yes/No/Not applicable	
	Do authors describe strategies used in the analysis to control for bias?	Extract as appropriate	Yes/No/Not applicable	
	Do authors describe ways in which they have addressed repeatability or reliability of data analysis?	Extract as appropriate	Yes / No	
	Do authors describe ways in which they have addressed validity of data analysis?	Extract as appropriate	Yes / No	
	If the study uses qualitative methods, were findings of the study supported by data?	Extract as appropriate	Well supported/Fairly supported/Limited support	
	Is there an adequate description of data analysis methods?	Extract as appropriate	Yes / No	
	Have sufficient attempts been made to establish repeatability or reliability of data analysis?	Extract as appropriate	Yes / No	
	Have sufficient attempts been made to establish validity of data analysis?	Extract as appropriate	Yes, a good attempt	
Findings	9. Is there a clear statement of findings?	Extract as appropriate	Yes / No	
Relevance	10. How valuable is the research?	Extract as appropriate	Yes / No	
	How generalizable are the study results?	Extract as appropriate	Details	
	Do reviewers differ from authors over the findings of the study?	Extract as appropriate	Yes / No	
Additional RoB analysis for Assessment of impact studies	Selection bias: Random sequence generation.	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups.	<b>High / Medium / Low</b>	
	Selection bias: Allocation concealment.	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen in advance of, or during, enrolment.	<b>High / Medium / Low</b>	

	Performance bias: Blinding of participants and personnel	Describe all measures used, if any, to blind study participants and personnel from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective.	<b>High / Medium / Low</b>	
	Performance bias: Blinding of outcome assessment	Describe all measures used, if any, to blind outcome assessors from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective.	<b>High / Medium / Low</b>	
	Incomplete outcome data	Describe the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis. State whether attrition and exclusions were reported, the numbers in each intervention group (compared with total randomized participants), reasons for attrition/exclusions where reported, and any re-inclusions in analyses performed by the review authors.	<b>High / Medium / Low</b>	
	Selective reporting.	State how the possibility of selective outcome reporting was examined by the review authors, and what was found.	<b>High / Medium / Low</b>	
	Other sources of bias.	State any important concerns about bias not addressed in the other domains in the tool.	<b>High / Medium / Low</b>	
	<b>What is the overall quality of the study?</b>		<b>High / Medium / Low</b>	

APPENDIX 2.8: DATA CODING AND EXTRACTION TOOL - SYNTHESIS

Aim	Study Design <sup>12</sup>		Method of Synthesis	Data extraction
Investigate acceptance feasibility or implementation of the intervention	Qualitative	Descriptive	Narrative synthesis/	Narratives to be determined
			Thematic analysis - Configurative	Themes to be determined
			Thematic analysis - Aggregative	Themes to be determined
Assess Cause/Harm	Quantitative	Comparative - Observational	Statistical – Effect sizes, Correlation coefficients, Regressions coefficients or Other	Will be extracted with the assistance of statistical specialist
Assess impact		Comparative - Experimental	Statistical – effect sizes	

<sup>12</sup> The categories of Descriptive, Comparative-Observational and Comparative-Experimental are from the Cochrane study design guide (Cochrane Collaboration (2013). Cochrane consumers & communication review group Study design guide for review authors. [http://cccr.org/sites/cccr.org/files/uploads/Study\\_design\\_guide2013.pdf](http://cccr.org/sites/cccr.org/files/uploads/Study_design_guide2013.pdf)). The terms Qualitative and Quantitative are used here as a more familiar shorthand for Descriptive and Comparative labels, respectively. [http://cccr.org/sites/cccr.org/files/uploads/Study\\_design\\_guide2013.pdf](http://cccr.org/sites/cccr.org/files/uploads/Study_design_guide2013.pdf)

## APPENDIX 2.9: DETAILED TIME TABLE

Tasks	Description	Start date	End date	Duration (days)	Remarks
Title Registration	Selected teams will register their reviews with the EPPI-Centre. The team is allowed around 2 weeks to complete the process after contract signing.	28-Mar-16	11-Apr-16	14	
Preparation of Preliminary Protocol	<p>Preliminary Protocol preparation will start simultaneously with title registration.</p> <p>Preliminary protocol will include- (1) Background, (2) Objectives and rationale for review, (3) Definitional and conceptual issues, (4) Conceptual Framework; (5) Methods of the review (review approach, identifying potential studies, inclusion-exclusion criteria, data collection and management, analysis, contextualisation, report writing etc.); (6) References</p> <p>Key inputs in preliminary protocol will be (1) determining the scope of the review and defining the inclusion - exclusion criteria and (2) developing a search strategy which includes determining which databases and other sources to search, which search terms to use; date(s) for including studies etc.</p> <p>Teams will consult advisory group members while preparing the preliminary protocol and / or will take their feedback on the draft preliminary protocol before submitting it for review.</p>	28-Mar-16	12-May-16	45	Start in parallel with title registration
Protocol review and revision	Protocol review will involve 2 stages - first stage review by QAT (3 weeks) and second stage review by DFID (2 weeks); Teams will revise protocol for QAT's comments in 2 weeks and for DFID's comments in 1 week.	12-May-16	7-Jul-16	56	
Stage I: Streamlining review scope based on availability of existing evidence	<p>This stage will include:</p> <p>(1) Search - Based on inclusion-exclusion criteria and key search terms agreed during preliminary protocol stage, relevant databases, websites and journals will be searched to identify and retrieve relevant primary studies.</p> <p>(2) Screening - Studies identified by the search are then checked (screened) to exclude those that do not meet the inclusion criteria. Screening will be carried out for titles, abstracts and full text.</p>	2-Jun-16	16-Aug-16	75	Start in parallel to review, assuming DFID will approve scope of research in preliminary protocol

Tasks	Description	Start date	End date	Duration (days)	Remarks
	<p>(3) Coding - Details of the selected studies are coded to understand characteristics of existing evidence.</p> <p>(4) Scoping: Based on coding of studies, existing evidence will be mapped by various domains- type of intervention, type of studies, geographical coverage etc. to understand scope of existing research for the theme.</p>				within 3 weeks.
Preparation of stage II protocol	<p>Teams will add following sections in preliminary protocol to prepare stage II protocol:</p> <p>(1) Results of searching and scoping exercise;</p> <p>(2) Proposed modifications in scope of research (research question, population, interventions, outcomes, types of studies, geographical coverage etc.) based on search and scoping and;</p> <p>(3) Approach for contextualisation.</p> <p>Teams will consult advisory group members while preparing stage II protocol and / or will take feedback from advisory group on draft stage II protocol before submitting it for review.</p>	1-Aug-16	31-Aug-16	30	
Stage II Protocol review & revision	<p>Stage II protocol will be reviewed by QAT (2 weeks) and DFID (1 week); Teams will revise protocol for QAT's comments in 2 weeks and for DFID's comments in 1 week.</p>	31-Aug-16	12-Oct-16	42	
Presentation of stage II protocol	<p>Teams will make a presentation on the finding of searching and scoping exercise as well refined scope of research to SR consortium, DFID and advisory group. PPT should be organised after 1 week of submitting stage II protocol.</p>	7-Sep-16	7-Sep-16		
Stage II start: Data extraction	<p>Relevant data and information will be extracted from selected studies using data extraction sheets;</p>	15-Sep-16	15-Oct-16	30	Start parallelly with review, assuming DFID will approve revised scope of work within 15 days of receiving stage

Tasks	Description	Start date	End date	Duration (days)	Remarks
					II protocol
Appraisal	Appraisal determines how much weight is placed on the evidence of each study included in the final synthesis. The three key components to critical appraisal are (1) the study's relevance to the review question, (2) the appropriateness of its methods in the context of the review, and (3) the quality of the execution of these methods.	10-Oct-16	21-Nov-16	42	
Synthesise	It is the process of integrating the findings from the included studies to answer the review question. It involves examining the available data, looking for patterns and interpreting them. Synthesis may involve qualitative or quantitative analysis or both. At this stage, team will draw key findings and conclusions.	16-Nov-16	28-Dec-16	42	
Contextualisation	The team will contextualise the findings to South Asia and specific countries mentioned in the RfP.	23-Dec-16	22-Jan-17	30	
Preparation of draft report and summary	The report will include (1) Structured abstract (background, methods, results, conclusions); (2) Executive summary; (3) Background; (4) Objectives; (5) Methods; (6) Search results; (7) Details of included studies; (8) Synthesis results; (9) Limitations; (10) Conclusions and recommendations; (11) References (included studies and studies excluded when inspecting full reports). The systematic review report will also include a section on contextualisation and policy relevant implications of findings.  Teams will consult advisory group members while preparing the SR report and / or will take feedback from advisory group on draft report and summary before submitting it for review.	17-Jan-17	16-Feb-17	30	
review and revision of draft SR report with contextualisation and SR summary	Draft report will be reviewed by first by QAT (4 weeks) and then by DFID (2 weeks); Teams will revise report for QAT's comments in 3 weeks and for DFID's comments in 1 week	16-Feb-17	27-Apr-17	70	
Dissemination	Organising dissemination workshop, stakeholder engagement (team will start planning the dissemination workshop upon submission of draft report. However, dissemination activities should	27-Apr-17	18-May-17	21	

Tasks	Description	Start date	End date	Duration (days)	Remarks
	only be initiated after the report has been finalised)				
Finalising SR report	Incorporating feedback received during dissemination in the final report.	18-May-17	28-May-17	10	
Total duration of SR (Days)				426	
Total duration of SR (Months)				14	



## APPENDIX 2.10: POTENTIAL USERS

Potential users for the systematic review include:

- Relevant Government Entities (Ministries and Departments) dealing with mineral resources; Ministry of Finance, Ministry of Environment, Forest and Climate Change
- Sector organizations/agencies working on community development
- Agencies implementing public investment projects
- Businesses and shareholders, state owned enterprises
- Wider public
- Local community and other beneficiaries
- Bilateral and Multilateral organizations: DFID, IFC, World Bank