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Nepal's 2072 Federal Constitution

Implications for the Governance of the Agricultural Sector

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ABSTRACT

In this paper we explore the implications of Nepal's new federal Constitution—passed in September 2015—for governance of the agricultural sector. Agriculture is the backbone of the Nepali economy, providing a livelihood for approximately two-thirds of the population, contributing one-third of the country's GDP, and constituting more than half of the country's exports. In transitioning from a unitary to a federal republic—with greater authority and autonomy granted to subnational units of government—it is of paramount importance to ensure that the agricultural sector is guided by coordinated planning, retains sufficient human capacity, and receives adequate fiscal resources. These considerations are particularly important given that the governance of Nepal's agricultural sector already suffers from poor coordination, low human resources capacity, and inadequate financial resources. Addressing these issues may become more difficult under a federal structure.

This paper begins by laying out the main challenges for agricultural governance in Nepal under the current structure. To do so, it relies on an original survey of 100 district agricultural and livestock officers in charge of local agricultural service delivery in Nepal as well as perspectives collected through more than two dozen semi-structured interviews with officials from the Ministry of Agricultural Development, the Ministry of Livestock Development, civil society, the private sector, and donors. Because Nepal is embarking on a pathway to more decentralized governance, which has been well-trodden by a number of other countries, the paper proceeds by examining five case studies, drawing lessons from India, Indonesia, Kenya, Malaysia, and South Africa. Based on these analyses, the paper offers policy recommendations on how the sector can be restructured to meet the constitutional provisions, while simultaneously ensuring that the government can deliver on its long-term objectives to develop the agricultural sector.

Keywords: governance, Nepal, decentralization, federalism, agriculture, service delivery
accountability

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ACRONYMS

ADS	Agricultural Development Strategy
AFFA	Agriculture, Fisheries and Food Authority Act (Kenya)
AIATs	Assessment Institutes for Agricultural Technology (Indonesia)
AICC	Agricultural Information and Communication Center
ANC	African National Congress (South Africa)
APAP	Agricultural Policy Action Plan (South Africa)
ARC	Agricultural Research Council (South Africa)
ASDS	Agricultural Sector Development Strategy (Kenya)
ATMA	Agricultural Technology Management Agency (India)
CACs	Citizen Awareness Centres
CPN-UML	Communist Party of Nepal- United Marxist Leninists
DADOs	District Agricultural Development Officers
DAFF	Department of Agriculture, Forestry and Fisheries (South Africa)
DDCs	District Development Committees
DFRS	Department of Forest Research and Survey
DFTQC	Department of Food Technology and Quality Control
DLOs	District Livestock Officers
DoA	Department of Agriculture
FIAC	Farm Information and Advisory Center (India)
FTE	full-time equivalent researcher
GDP	gross domestic product
GoN	Government of Nepal
IAARD	Indonesian Agency for Agricultural Research and Development (Indonesia)
ICAR	Indian Council for Agricultural Research (India)
IIDS	Institute for Integrated Development Studies
IFP	Inkatha Freedom Party (South Africa)
IRIEC	Indonesian Research Institute for Estate Crops
KADU	Kenya African Democratic Union (Kenya)
KALRO	Kenya Agricultural and Livestock Research Organization (Kenya)
KARI	Kenya Agricultural Research Institute (Kenya)
KVKs	Krishi Vigyan Kendras (India)
LDOs	local development officers
LGCDP	Local Governance and Community Development Program
LSGA	Local Self-Governance Act
MARDI	Malaysian Agricultural Research and Development Institute (Malaysia)
MC/PM	Minimum Conditions/Performance Management
MECs	Members of the Executive Council (South Africa)
MinMECs	Ministers and Members of Provincial Executive Committees (South Africa)
MoLD	Ministry of Livestock Development

MLRM	Ministry of Land Reform and Management
MoAD	Ministry of Agricultural Development
MoCPA	Ministry of Cooperatives and Poverty Alleviation
MoE	Ministry of Energy
MoF	Ministry of Finance
MoFALD	Ministry of Federal Affairs and Local Development
MoFSC	Ministry of Forestry and Soil Conservation
MoGA	Ministry of General Administration
MoI	Ministry of Irrigation
MST	Ministry of Science and Technology
NARC	Nepal Agricultural Research Council
NARI	National Agricultural Research Institute
NASRI	National Animal Science Research Institute
NAST	Nepal Academy of Science and Technology
NFSCC	National Food Safety Coordination Committee (Kenya)
NLSS	Nepal Living Standards Surveys
NP	National Party (South Africa)
PDA	Provincial Department of Agriculture (South Africa)
Pemandu	Performance Management and Delivery Unit (Malaysia)
PREPARE	Project to Prepare the Public Administration for State Reforms
PSC	Public Service Commission
R&D	research and development
SABS	South African Bureau of Standards (South Africa)
SALGA	South African Local Governance Association (South Africa)
SAMETI	State-Level Agricultural Management and Extension Training Institute (India)
SPS	Phyto-Sanitary Measures
TU	Tribhuvan University
UKP4	President's Delivery Unit for Development Monitoring and Oversight (Indonesia)
UNDP	United Nations Development Programme
VDCs	Village Development Committees
WCF	Ward Citizens Forums

1. INTRODUCTION

After a lengthy period of consultation, in September 2015 Nepal's elected parliamentary body, the Constituent Assembly, passed a new constitution, known as the 2072 Constitution of Nepal.¹ Among other notable provisions, a key objective of the Constitution is to transform Nepal into a "federal, democratic, republican country" in the next two years.² This reform represents a new chapter in Nepal's history, which has been relatively fragile and volatile since the 1990s.

In 1990, a people's movement restored multiparty parliamentary government under the Constitution of the Kingdom of Nepal, with the king as head of state and the prime minister as head of government. A series of coalition governments ensued until 1996, when the Communist Party of Nepal-United Marxist Leninists (CPN-UML) launched a Maoist insurgency. A central claim of the Maoists was that the centralized and unitary nature of successive Nepalese governments had exacerbated inequality and failed to address the needs of local people (Boex 2012a). A decade later, the government signed a Comprehensive Peace Accord with the Maoists, and an Interim Constitution was promulgated in 2007. The Interim Constitution committed to transforming Nepal from a unitary to a federal system to redress government centralization and end discrimination. The 2072 Constitution, which provided concrete details about how to implement the federal state project, represented the culmination of these efforts (Asia Foundation 2012).

Federalism refers to a division of powers among multiple entities, typically between a central and regional (provincial/state) government. According to Riker (1975, 101), "federalism is a political organization in which the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decisions." There are several key characteristics of federalism, including a bicameral legislature, a written constitution that is difficult to amend, and a special court that uses the power of judicial review to protect the Constitution and the authority it bestows on different levels of government (Duchacek 1970). As elaborated by Stepan (1999), there are several pathways by which countries may decide on a federated state. The "coming together" pathway assumes that previously sovereign polities pool resources and forfeit some sovereignty in order to gain collective security, and to achieve other political or economic goals (for example, Australia, Switzerland, and the United States). The "holding together" pathway, by contrast, typically refers to multicultural, heterogeneous countries that devolve certain powers and transform into federations so as to avoid complete dissolution and conflict (for instance, Belgium, Ethiopia, India, Nigeria, and Spain).

Given its history and motivated by concerns about equity and representation, Nepal has followed the "holding together" pathway to federalism. This decision has implications for the structure of responsibilities and finances across different levels of government. According to the Constitution, there will be three levels of government: the federation, the province, and the local level.³ As of the writing of this paper, the Constitution stipulated the creation of seven provinces to replace the current five development regions. While the current 75 districts will remain, they will constitute the administrative unit for parliamentary constituencies rather than the unit for local government administration.⁴ Local-level government, in turn, will be represented by approximately 1,000 village or municipal development councils. The federal government can also declare certain areas as autonomous or protected for social reasons, economic development, or cultural protection.

However, the new Constitution does not start with a blank slate. The agricultural sector in Nepal has several preexisting features that will need to be taken into account when considering how to implement the federal structure. Most notably, rural livelihoods are quite distinct across the country's

¹ Nepal operates on the Vikram Samvat, a Hindu calendar used by Nepal and some Indian states; 2072 refers to the year, according to the Vikram Samvat calendar, in which the new Constitution was passed.

² See Part 7, section 74.

³ Part 5, section 56.

⁴ See Schedule 4.

three broad agro-ecological zones, known as the Terai, the mid-hills, and the mountains. Given the topography, only approximately 20 percent of Nepal's land can be cultivated. Nonetheless, agriculture represents the livelihood of approximately two-thirds of the population, and constitutes about one-third of the country's GDP and more than half of its exports (USAID 2013).

In addition to a complex agricultural economy, the move to federalism contends with a governance landscape of the agricultural sector that is already quite complex. The Ministry of Agricultural Development (MoAD) is the main ministry in charge of developing the agricultural sector. MoAD consists of five divisions: Agribusiness Promotion and Statistics; Planning, Monitoring and Evaluation; Gender Equality and Environment; Agricultural Policy and Foreign Aid Coordination; and Administration (Quinn and Gupta 2013). Also subsumed under MoAD are the Department of Agriculture (DoA) and the Department of Food Technology and Quality Control (DFTQC). However, a number of other ministries are also relevant to the agriculture sector. These include the Ministry of Livestock Development (MoLD), the Ministry of Irrigation (MoI), the Ministry of Land Reform and Management (MLRM), the Ministry of Forestry and Soil Conservation (MoFSC), the Ministry of Cooperatives and Poverty Alleviation (MoCPA), the Ministry of Federal Affairs and Local Development (MoFALD), the Ministry of Energy (MoE), and the Ministry of Finance (MoF) (Quinn and Gupta 2013). In addition to a number of ministries operating in the sector at the national level, the Local Self Governance Act of 1999 effectively decentralized agriculture and livestock, as well as primary health and primary education. This means that agricultural governance already involves horizontal coordination across ministries and vertical coordination across different tiers of government.

Further, the Government of Nepal has committed to agricultural development goals, which it will now pursue within a federal structure. The country's current agricultural framework is guided by the Agricultural Development Strategy (ADS), which is intended to provide direction within the sector for the next two decades. The ADS is a 20-year vision that ultimately aims to achieve "a self-reliant, sustainable, competitive, and inclusive agricultural sector that drives economic growth and contributes to improved livelihoods and food and nutrition security leading to food sovereignty" (Nepal, MoAD 2013, 3). There are also a number of cross-ministerial policies and strategies intended to achieve food security more broadly, including the Multi-Sector Nutritional Plan, the Food Security Action Plan, and the Zero Hunger Challenge Initiative 2025. These goals will carry over to the new administrative structure.

In accordance with the shift to federalism, the 2072 Constitution outlines significant changes for the governance of the agricultural sector. Currently, this sector is devolved in theory but not in practice, with appointed—rather than elected—local government bodies exercising relatively little authority over many aspects of budgeting and employment. The 2072 Constitution, by contrast, stipulates that "agricultural and livestock development" (Schedule 6) will be a provincial power and that "agriculture and animal husbandry, agro-products management, animal health, and cooperatives" (Schedule 8) will be local powers. In addition, "agriculture" is included in the list of concurrent powers at the federal, provincial, and local levels (Schedule 9). Moreover, the Constitution stipulates that executive power at the local level will be vested in either a Village Executive or a Municipal Executive, who will be overseen by either an elected village Chairperson or a Municipal Mayor, respectively. This deviates from the current situation where local government is overseen by appointed Local Development Officers who are appointed by MoFALD.

Consequently, the constitution has two clear implications for the governance of the agricultural sector: (1) authority and autonomy for various agricultural and livestock activities will be devolved from the MoAD in Kathmandu to the seven anticipated provincial governments as well as newly constituted local bodies, and (2) those new local bodies will be overseen by elected rather than appointed executives, who will be able to determine their own policy priorities. However, exactly how and over which domains authority will be devolved remains unresolved, as "agriculture" is listed as a concurrent function across all tiers of government in the Constitution. At the same time, the Constitution has a strong rights-based discourse, and includes a provision noting that "every citizen shall have the right to food sovereignty in accordance with the law" (Part 3, section 36).

This paper addresses how MoAD—and governance of the agricultural sector more generally—can be restructured to meet the constitutional provisions while simultaneously delivering on its agricultural objectives. We build on insights from existing functional analyses of agriculture provided by the UNDP (Pathak 2015). However, we also incorporate a more holistic perspective that draws linkages between the broader fiscal, administrative, and policy contexts to potential changes, challenges, and opportunities for the sector in a federal Nepal. The paper first elaborates on the implications of the 2072 constitutional provisions for agriculture. Subsequently, the status of decentralization and agricultural policy planning in Nepal is elaborated to identify key challenges and opportunities that may arise during anticipated reforms. This is followed by more focused attention to agricultural research, agricultural extension, and food safety in Nepal. Attention is given to a framework focused around accountability, autonomy, authority, incentives, and coordination. While the first three characteristics are critical to achieving genuine devolution through federalism, the latter two are essential for ensuring delivery on sectoral goals and retaining high-quality staff. These concepts are elaborated in Table 1.1 below.

Table 1.1 Key concepts

Objectives	Implications
Authority	Clear delineation of responsibilities across tiers within a legal framework
Autonomy	Adequate control over fiscal and human resources to fulfill responsibilities
Accountability	Flows of information and mechanisms for rewards/sanctions, both vertically (between citizens and governments and between tiers of government) and horizontally (across ministries and actors engaged in complimentary activities)
Coordination	Institutional mechanisms and other options for ensuring horizontal and vertical coordination
Incentives	Human resource and expenditure policies that encourage good performance and efficient service delivery

Source: Compiled by authors.

This framework is applied in order to understand the important role in this process already played by authorities and institutions at the subnational level, including district development committees (DDCs), district agricultural development officers (DADOs), and village development committees (VDCs). Subsequently, the paper raises a number of key concerns for relevant stakeholders. These include the autonomy of the Nepal Agricultural Research Council (NARC), the role of a food regulatory agency, the potential consolidation of all ministries relevant to agriculture, and the achievement of national agricultural goals despite the anticipated autonomy of newly elected local governments. Through case studies of a select group of countries—Indonesia, India, Kenya, Malaysia, and South Africa—we highlight various institutional mechanisms and approaches that might be applicable and feasible for addressing those concerns in Nepal. In doing so, we emphasize the opportunity for borrowing effective modalities and mechanisms from different settings rather than adopting one country’s model wholesale. This mitigates against “institutional monocropping” whereby “uniform institutional blueprints” used in one country context are applied in settings with very different characteristics and capacities (Evans 2004).

Methodologically, the paper relies on two main sources. First, it combines interviews conducted in January 2016 with 25 stakeholders in government, civil society, and the donor community with various secondary resources. The full list of interviewees can be found in Appendix Table A.1. Second, to gain a better understanding for the current policy challenges in Nepal at the local level, we conducted structured interviews with 50 DADOs and 50 District Livestock Officers (DLOs). In order to gain a wide and representative perspective, the DADOs and DLOs were drawn from 50 randomly selected districts across all development regions, proposed provinces, and agro-ecological zones.

The paper contains six sections. Section 2 reviews the 2072 Constitution and its implications for governance of the agricultural sector. Section 3 presents some of the key results from the survey of DADOs and DLOs. Attention is focused on how the key principles of authority, autonomy, accountability, coordination, and incentives play out for agricultural research, the agricultural extension system, and food safety control. Section 4 provides a comparative framework for federal restructuring, drawing lessons from Kenya, India, Indonesia, Malaysia, and South Africa. In Section 5, we specify policy recommendations based on insights from the case studies. Section 6 concludes.

2. DECENTRALIZATION AND THE 2072 CONSTITUTION

Definitional Issues and Background on Decentralization

As countries have become dissatisfied with centralized approaches to delivering public services, a growing number have begun decentralizing the responsibility for delivering public services to lower-level governments. Devolution represents the most extensive type of decentralization, and should ideally involve the transfer of authority, autonomy, and accountability to subnational governments for local decision making, finance, and management (Cheema and Rondinelli 2007; Kathyola and Job 2011). The fact that accountability is transferred to subnational governments means that citizens must have a means of holding them accountable for areas of authority, typically through elections, under devolution. Delegation, by contrast, entails the transfer of substantive managerial authority and, often, fiscal autonomy to local governments. For instance, employees may be fired and hired by the local government without central government approval. However, under this system local governments remain accountable to the central government rather than to local constituencies. Deconcentration is the most limited form of decentralization. Under deconcentration, authority is dispersed from the central government to local branch offices, which are in turn accountable to the central government. In other words, the central government retains authority over decision making and local government is responsible for implementation. State structure does not necessarily map neatly onto degree of decentralization: federal states can still be oriented toward deconcentration while unitary states can be devolved.

Decentralization offers countries an opportunity to tailor public services to the needs and priorities of local constituencies, a benefit that can be particularly valuable in socially and geographically diverse countries such as Nepal. However, decentralization is not without pitfalls. This paper is organized around the principles of authority, autonomy, accountability, incentives, and coordination—all key issues that arise during the decentralization process. Although we discuss the issues separately, they are interrelated and can involve trade-offs.

Decentralization is a redistribution of authority over functions across tiers of government; any system where authority is not concentrated in a single tier of government has the potential for overlapping and unclear authorities. Thus, a strong legal framework is needed to delineate and clarify responsibilities. Transferring authority over a particular governance function to a lower tier of government without granting authority over budgets and employment limits the scope, in practice, of local government's autonomy over the functional area. For example, a subnational government responsible for delivering primary education has limited scope to exercise autonomy to meet local priorities and needs without the ability to exercise discretion over the budget and the hiring and firing of teachers. However, devolving authority is not without costs: local preferences may not match up with national development goals, and subnational governments with autonomy can be expected to exercise this autonomy to pursue local rather than national goals. Further, subnational governments may initially lack the capacity to adequately fulfill new areas of authority upon implementing decentralization.

Accountability, incentives, and coordination are also linked. Subnational governments may have authority over a particular governance function. However, without accountability to constituencies for performance, local governments may not shape their policies to match up with local preferences—one of the primary potential benefits of decentralization. However, even when accountability relationships exist (for example, through local elections), subnational governments must be able to provide incentives for the civil servants that are responsible for implementing governance functions. Finally, decentralized structures introduce problems of coordination, horizontally among ministries at each tier of government and across local governments, and vertically between local governments and the central government. When authority is devolved, achieving any kind of goal larger than the boundaries of a given local government unit requires coordination among autonomous bodies. Greater accountability and incentives can ease the challenges of coordination by making coordination in the interests of subnational governments and civil servants employed at the subnational level.

Below, we discuss some of the specific challenges faced by Nepal under the status quo governance structure. We discuss how these challenges may be either exacerbated or mitigated by the move to federalism. Understanding the implications of the restructuring outlined in the previous section requires recognizing that the new Constitution essentially builds on previous incarnations of decentralization efforts, which have typically manifested as deconcentration rather than devolution.

The 2072 Constitution and the Agricultural Sector in Nepal

Nepal's anticipated shift to a devolved, federal structure due to the passage of the 2072 Constitution represents a stark change from its current unitary and relatively deconcentrated structure. Currently, there are 75 DDCs with a population of approximately 300,000 each. Below the district level, there are 217 municipalities and 3,157 VDCs.⁵ Following the creation of a high-level decentralization coordination committee in 1996, the Local Self-Governance Act (LSGA) was enacted in 1999. The LSGA is widely viewed as a landmark piece of legislation that accorded greater responsibilities to these subnational structures.

In particular, local bodies were charged with setting development priorities, allocating budgets, and monitoring the implementation of local development projects (Carter Center 2014).⁶ Importantly, the LSGA also stipulated that VDC committees would consist of 11 elected representatives. A civil servant appointed by the central government would serve as the VDC administrator (UNDP 2014). To improve transparency, accountability, and public participation, the central government was supposed to devolve authority in three sectors to these elected local bodies: health, education, and agriculture and livestock extension. Another key component of the LSGA was the requirement that all local bodies formulate annual and five-year development plans based on citizen input. The Fourteen Point Planning Process provides the guidelines for a participatory planning, budgeting, and monitoring process. This process requires downward communication from line ministries, MoFALD, and the National Planning Commission (NPC) to local bodies in regard to annual budget ceilings and spending guidelines. In addition, the process necessitates upward communication from the grassroots level of local development plans to local bodies and, ultimately, to the NPC.⁷

Yet, in practice, the government has remained quite unitary. By 2000, civil conflict had affected about half of the 75 districts, predominantly in rural areas. Insurgents often targeted VDC offices, causing elected officials to flee their villages (Carter Center 2014). Consequently, in 2002, the government decided that it was not possible to hold new local elections and instead allowed the terms of those officials who were elected in 1998 to expire. Therefore, for the last 14 years, local governments effectively have been run by civil servants appointed by MoFALD. Even within the avowedly devolved sectors, line agency officials were assigned to carry out policy implementation within the DDCs (Nepal, NPC 2006). In the agricultural sector, these include DADOs and DLOs. Because local governments are appointed rather than elected and local civil servants are accountable to the central government rather than to elected local governments, Nepal has a relatively unitary and deconcentrated structure rather than one in which authority is truly devolved to the local level.

The 2072 Constitution aims to transform the current unitary, deconcentrated structure through federalism. In accordance with the shift to federalism, the 2072 Constitution outlines significant changes to the governance of the agricultural sector specifically, as well as for the structure of the Nepali state more generally. Most fundamentally, the Constitution stipulates the creation of seven provinces that will replace the current five development regions. While the current 75 districts will remain, they will serve as the administrative unit for parliamentary constituencies rather than the unit for local government

⁵ VDCs, on average, contain a population of less than 6,000 residents.

⁶ "Local bodies" is the collective term used to refer to DDCs, VDCs, municipalities, and wards.

⁷ Specific details on the Fourteen Point Planning Process as well as on fiscal decentralization in Nepal are available in Appendix B.

administration.⁸ Instead, local-level government will be represented by approximately 1,000 village or municipal development councils.

Nepal's new Constitution authorizes different tiers of government to assume control over different policy areas. However, it is not yet entirely clear what the enumerated powers mean for agricultural policy. According to Schedule 5, only a few functions are reserved exclusively for the federal government, including major irrigations projects, national ecology and forestry management, land use policy, water use policy, and quarantine. Enumerated powers for provinces within the agricultural sector include provincial-level environmental and forest management, and agriculture and livestock development. Scientific research is listed as a concurrent power of both the provinces and the federal government. Local-level governments are given exclusive power over farming and livestock, agriculture production management, livestock health, local roads, local irrigation projects, and management and control of agricultural extension. However, agriculture as a whole is also listed as a concurrent function of federal, provincial, and local governments, leaving relatively open which tier of government may ultimately gain authority over different aspects of agricultural policy.

Table 2.1 describes the primary responsibilities in governing the agricultural sector and the government tier given primary authority for the particular responsibility. As can be seen from the table, many of the responsibilities are officially allocated across multiple tiers of government, leaving it unclear according to the Constitution where certain powers should lie. There is particular ambiguity over agricultural research, food safety, environmental protection and conservation, and agricultural education. Typically, when there are concurrent functions, the principle of subsidiarity prevails, which means that the lowest government tier that is capable of performing the function should be given the mandate to do so.

Table 2.1 Schedule of powers across tiers of government within the agricultural sector according to the 2072 Constitution

Responsibilities	Government tier allocated authority
Regulatory Services	
- <i>Food Safety</i>	Federal, Provinces
- <i>Plant Quarantine</i>	Federal
- <i>Livestock Quarantine</i>	Federal
- <i>Seed Safety</i>	<i>Unspecified</i>
Research and Development	Federal, Province
Agricultural Education	<i>Unspecified</i>
Agricultural and Livestock Extension Services	Local
Environmental Protection and Conservation	
- <i>Soil Health</i>	Federal, Province, Local
- <i>Forests</i>	Federal, Province, Local
- <i>Water Use</i>	Federal, Province, Local
Land Use, Land Tenure, Land Reform	Federal, Province
Irrigation	Federal, Province, Local
Rural Infrastructure	Federal, Province, Local

Source: The Constitution of Nepal (GoN 2015).

As highlighted by Table 2.2, the new Constitution will increase accountability and autonomy by stipulating that local governments be elected rather than appointed and by delineating responsibilities at all levels of government (that is, federal, provincial, and local). Authority may, however, be constrained by overlapping mandates across levels of government, requiring attention to both horizontal and vertical coordination mechanisms. In the sectors that have already been deconcentrated, attention should be directed at incentive structures to ensure adequate capacity at the local level, where staff will now be hired and fired.

⁸ See Schedule 4.

Table 2.2 Constitutional changes and implications for agriculture

Characteristic	Prior to 2072 Constitution	After 2072 Constitution*	Potential challenges for agriculture
Units of government	<ul style="list-style-type: none"> National, development regions (5), districts (75), VDCs (3,915), and municipalities (58) 	<ul style="list-style-type: none"> National government, federal provinces (7), districts (75), local bodies (amalgam of current VDCs and municipalities) 	<ul style="list-style-type: none"> Human resource and financial capacity at the local body level may be insufficient
Administration of local bodies	<ul style="list-style-type: none"> Appointments by MoFALD of officials to administer local bodies 	<ul style="list-style-type: none"> Elections at the national, provincial, and local (VDC and municipality) levels District boundaries will be retained for parliamentary constituencies 	<ul style="list-style-type: none"> Potential disconnect between national agricultural priorities and those of locally elected governments
Responsibility for agricultural functions	<ul style="list-style-type: none"> Agricultural policy development at national level and implementation at subnational level Agricultural and livestock extension deconcentrated to DDCs through DADOs and DLOs 	<ul style="list-style-type: none"> Agricultural policy development and implementation at <i>both</i> national and sub-national levels Agricultural and livestock extension devolved to subnational government 	<ul style="list-style-type: none"> Different tiers of government have authority over different elements of agriculture, requiring high levels of horizontal and vertical coordination
Agricultural expenditures	<ul style="list-style-type: none"> Line ministries transfer resources to district staff via the DDC DDCs receive a block grant for agricultural spending 	<ul style="list-style-type: none"> Local government has greater autonomy over budgeting for, and spending on, agricultural priorities 	<ul style="list-style-type: none"> Agriculture may not be prioritized by local governments or communities, requiring attention to budgeting mechanisms
Staffing	<ul style="list-style-type: none"> Civil service staff at the national, provincial, and district levels recruited through the National Public Service Commission 	<ul style="list-style-type: none"> Civil service staff at the provincial and local levels recruited through a Provincial Public Service Commission; federal civil servants continue to be recruited by the National Public Service Commission 	<ul style="list-style-type: none"> Difficult to find staff to move to remote rural areas without incentives Extension staff are responsible to local government but hired through the Provincial Public Service Commission, creating a disconnect between authority and accountability

Source: Authors' compilation.

Notes: * These are proposed changes that have not necessarily been implemented yet. VDCs = Village Development Committees; MoFALD = Ministry of Federal Affairs and Local Development; DDCs = District Development Communities; DADOs = District Agricultural Development Officers; DLOs = District Livestock Officers.

The Constitution stipulates a period of two years for Nepal to transition from a unitary to a federal republic. This is quite an ambitious timeline for implementing administrative restructuring. In particular, it may be difficult to develop a concrete plan for restructuring until key decisions have been made about the size and number of local government units, and how fiscal decentralization will be implemented. A key lesson from other countries that we highlight throughout the paper is the importance of flexibility and of building in opportunities for review and revision as reforms are implemented.

3. CHALLENGES AND OPPORTUNITIES OF FEDERALISM FOR GOVERNANCE OF THE AGRICULTURAL SECTOR IN NEPAL

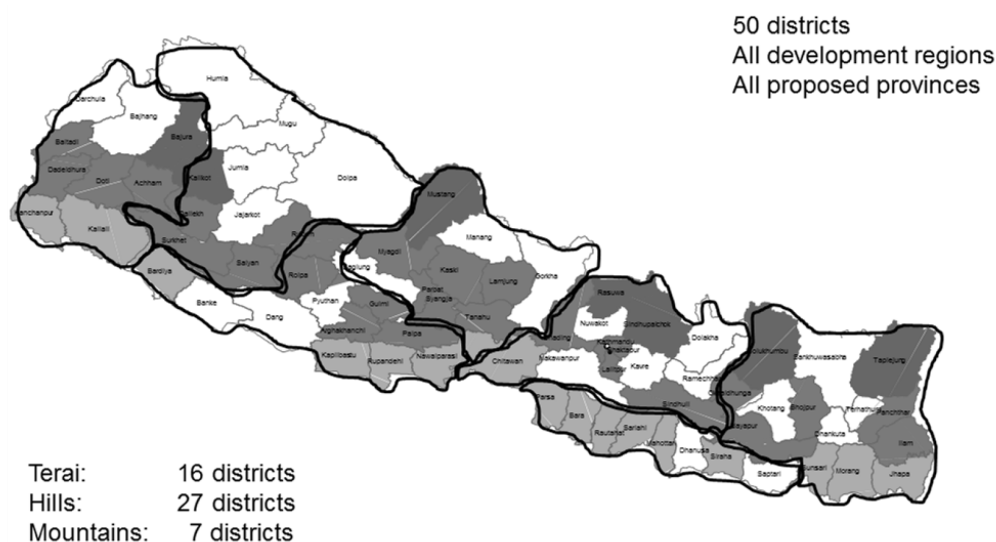
Some of the current weaknesses of the decentralized structure and challenges of implementing the participatory planning process in Nepal will be heightened as the country adopts a federal structure, while others will be mitigated. We elaborate on some of the current challenges, examining the issues of authority, autonomy, accountability, coordination, and incentives. In doing so, we draw extensively from interviews conducted with local stakeholders within government, civil society, and the donor community, as well as from the 100 DADO/DLO interviews conducted between June and August 2016.

This section proceeds in five main parts. First, we describe the survey conducted with DADOs and DLOs, including its methodology and geographic scope. Second, we examine the overall decentralization context for Nepal. Third, we explore the governance of agricultural research specifically. The fourth part discusses the agricultural extension system in Nepal. Finally, we examine food safety control in Nepal. We provide background on the current status of each of these areas of agricultural governance in Nepal, and discuss how constitutional reforms will impact each issue. Throughout, we pay attention to the issues of authority, autonomy, accountability, coordination, and incentives.

DADO/DLO Survey

Between June and August 2016, in partnership with the Institute for Integrated Development Studies (IIDS) in Kathmandu and with the support of MoAD and MoLD, we conducted a survey of DADOs and DLOs from 50 randomly selected districts across all development regions, all seven proposed provinces, and all agro-ecological zones in Nepal. The survey sample can be seen in Figure 3.1, where the black lines provide a rough indication of the proposed provincial boundaries as set forth in the 2072 Constitution.⁹ Surveyed districts in the mountain zone are depicted in red, while surveyed districts in the hill and Terai zones are depicted in blue and green, respectively.

Figure 3.1 DADO/DLO survey sample



Source: Authors' compilation

Notes: DADO = District Agricultural Development Officer; DLO = District Livestock Officer. The lines provide a rough indication of the provincial boundaries as set forth in the 2072 Constitution. Boundaries were still under consideration as of the writing of this paper. The district and provincial boundaries used are indicative and not a representation of official boundaries.

⁹ These boundaries are still under consideration—and remain controversial—as of the writing of this paper.

We paid careful attention to ensuring that the selected districts are representative of a wide cross-section of context and conditions in Nepal. We selected the districts using the following method. First, we randomly selected at the VDC/municipality level, stratifying the sample by each of the seven proposed provinces and by agro-ecological zone. We aimed to select 10 to 11 VDCs/municipalities in each of the seven proposed provinces. Within each province, we stratified across agro-ecological zones, weighting by the population share within the province in each agro-ecological zone. Using this approach, we drew a randomly selected survey sample at the VDC/municipality level that comprised 48 districts. We then randomly selected two additional districts to add to the sample in order to survey 50 districts in all, or two-thirds of Nepal's 75 districts.

In all, we surveyed participants in 7 mountain districts, 27 hill districts, and 16 Terai districts. Using a large sample size, geographic scope, and random selection—rather than a convenience sample—enables us to draw useful conclusions about the opportunities and constraints faced by DADOs and DLOs across Nepal. Throughout the paper, we will report statistics aggregated by agro-ecological zone or by province and will not identify specific districts in order to preserve the anonymity of the respondents.

Context for Decentralization in Nepal

Authority

Nepal currently faces several challenges regarding how authority for different functions is distributed across tiers of government. First, the distribution of authority does not always match with capabilities. Under the status quo, both the VDC and the DDC have been allocated important and often overlapping service delivery responsibilities. However, the VDCs are frequently too small to provide effective economies of scale and lack sufficient human capacity, evidenced by the fact that some do not have a VDC chair. By contrast, the DDC might be a more effective unit of government for decentralization, but it often tends to be relegated to an intermediate administrative body that transfers financing downward from the central government and channels demand upward from the VDCs, especially through the Fourteen Point Policy Planning Process.¹⁰ The decision by MoFALD to make the lowest subtier of government larger than the current VDCs, albeit still smaller than the districts, should ensure a greater confluence of authority with capacity.

Second, imbalances between functional authority and budgetary authority currently exist. For example, while agricultural service delivery in Nepal under the existing system has been devolved to local bodies, these do not have budgetary authority over agricultural service delivery nor do they have the authority to make personnel decisions. This limits the ability of local bodies to shape service delivery according to local goals and priorities. In general, countries can avoid imbalances by implementing a “finance follows function” principle. Under this principle, subnational bodies determine development priorities and spending allocations for functional areas for which local priorities are deemed paramount. In contrast, central government agencies determine development priorities and spending allocations for functional areas of core importance to the national government. Accordingly, local bodies retain budgetary control over the areas assigned to them, and the central government retains budgetary control over areas assigned to it. Imbalances between functional authority and budgetary authority can create policy bottlenecks, hinder transparency, and cause accountability failures.

¹⁰ The Fourteen Point Policy Planning Process enables VDCs to plan local development projects, which are then reviewed by DDCs and potentially funded through DDC block grants. See Appendix Table B.1 for details on the Fourteen Point Policy Planning Process in Nepal and how it works in the agricultural sector specifically.

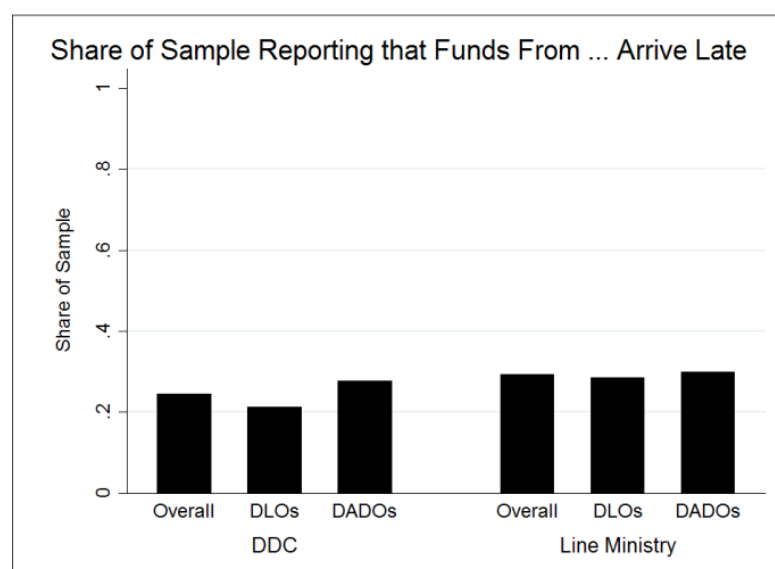
Autonomy

Under the status quo, subnational governments have little autonomy over fiscal matters. As of 2013, only 8 percent of total government expenditures occurred at the local level within local bodies, exclusive of expenditures by deconcentrated government ministries (GoN 2015a). In addition, most revenues within local bodies come from intergovernmental transfers rather than own-sourced revenues. Own-source revenues of local bodies include user charges and fees (DDCs and municipalities); sales taxes on sand, boulders, and wood (DDCs); and rent and tenancy property taxes (VDCs and municipalities). However, local bodies lack the autonomy to set tax rates or bases, and they generally do not have mechanisms to enforce payment of local taxes (World Bank 2014a). In the 2012/2013 fiscal year, own-source revenue constituted only 13 percent of total local body revenue.

District agricultural and other sectoral officers' budgets come from their respective central line offices, although they must be approved first by the appointed DDC head before dispersal (Root 2014). Expenditures that are for "devolved" sectoral services are included in the budget as spending for the relevant ministry rather than as grants to local bodies (Boex 2012a). Without genuine fiscal decentralization, local bodies lack the autonomy to shape service delivery according to local needs and priorities.

In practice, local decision making under the current deconcentrated framework is further undermined by delays in the receipt of funds at the local level. It is difficult to execute local plans without knowing when funds will arrive from the central government. Around 30 percent of DADOs and DLOs reported that late arrival of line ministry funds is a challenge for agricultural policy planning and implementation in their district, and about 24 percent reported that late arrival of DDC funds to the district is a problem (Figure 3.2). This obstacle is not confined to a small number of districts: Either DADOs or DLOs from 25 out of 50 surveyed districts reported that late arrival of line ministry funds is a challenge for policy planning and implementation, as did DADOs or DLOs from 20 out of 50 surveyed districts with respect to late arrival of DDC funds. Granting local-level autonomy under the new Constitution will require improving public financial management so that local leaders can deliver on local projects.

Figure 3.2 Funds arriving late in districts



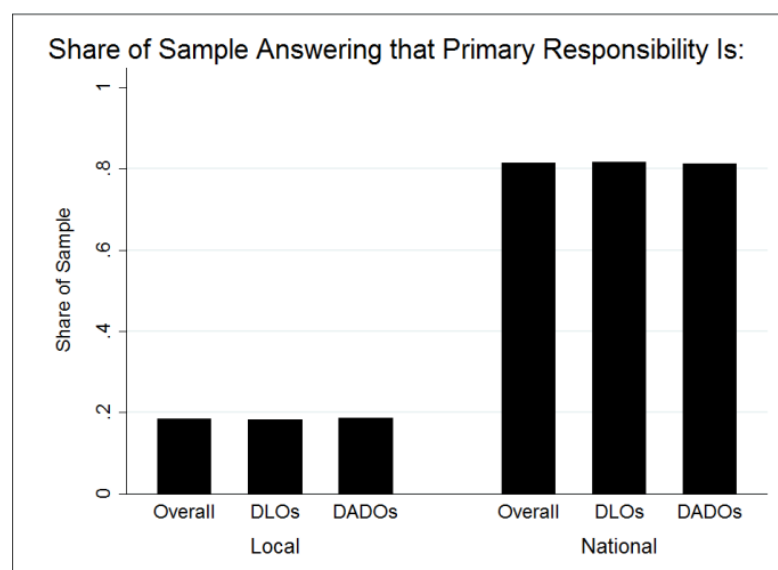
Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADO = District Agriculture Development Officer; DLO = District Livestock Officer; DDC = District Development Committee. Exact question wording is as follows: Are any of the following challenges for policy planning or implementation for agriculture in your district? MoAD/MoLD funds are disbursed late to the district (Yes/No/Don't Know). DDC funds are disbursed late to this district (Yes/ No/Don't Know).

Accountability

Under the current deconcentrated setting, district-line offices generally have been accountable only to the line ministries at the central level rather than to local communities since, without local elections, there are no mechanisms by which local communities can punish (or reward) them. This was reflected in the DADO/DLO survey, where 80 percent of respondents reported that their primary responsibility is to implement MoAD and MoLD programs to fulfill national development goals rather than to help farmers in their districts to solve local problems (Figure 3.3).

Figure 3.3: Accountability relationships in current context



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADO = District Agricultural Development Officer; DLO = District Livestock Officer; DDC = District Development Committee. Exact question wording is as follows: Which of the following statements is closest to your view? Statement 1: The primary responsibility of a DADO/DLO is to help farmers in this district to solve problems ("local"). Statement 2: The primary responsibility of a DADO/DLO is to implement the policies and programs of MoAD/MoLD in order to fulfill national development goals ("national").

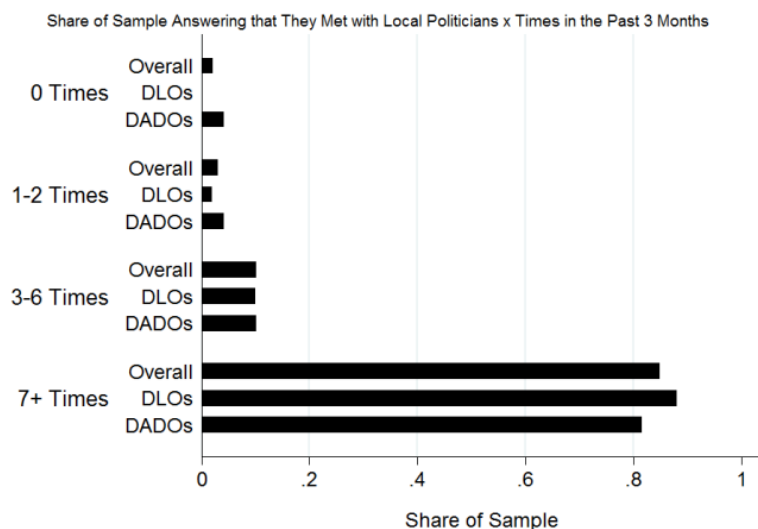
More generally, it is challenging to implement participatory planning without a direct accountability mechanism between citizens and local service providers. While VDC secretaries are appointed rather than elected, local citizens lack the means to hold them directly accountable for the planning, resource allocation, and implementation of local development projects. The reintroduction of local elections in Nepal as part of the new Constitution will hopefully improve the accountability feedback loop over local planning and budgeting and over service delivery and performance.

The absence of local elections does not mean, however, that there is an absence of local politicians in Nepal. DADOs and DLOs report that local politicians and the general politicization of their local staff present formidable challenges to policy implementation today. Despite the lack of local elections, local party officials are prevalent throughout Nepal and are heavily involved in policy planning: over 80 percent of DADOs and DLOs report meeting with local party officials at least every other week (Figure 3.4). Numerous DADOs and DLOs stated that they face "high political pressure" and "political interference" with their work and that their staff is highly involved in local political organization in ways that make it more difficult to execute policy, with staff "hold[ing] political grudges."¹¹ In other words,

¹¹ Quote is taken from the DADO / DLO survey in response to the question: "Are there any other challenges related to policy planning or implementation for agriculture that you face in this district?" We do not identify the district in order to preserve the anonymity of the respondents.

DADOs and DLOs are currently managing relationships with local officials from many political parties, none of whom have been formally elected as a representative of the local citizens. Holding local elections will increase the accountability of these political officials to citizens and may reduce the number of parties that local civil servants have to manage. On the other hand, especially during the early years of introducing local elections while political parties are vying for local support, politicization of local policy planning and of civil servants could increase.

Figure 3.4 Meetings with local politicians



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DLOs = District Livestock Officer; DADOs = District Agricultural Development Officer. Exact question wording is as follows: Please indicate how often you met with local politicians during the past 3 months: Never, 1–2 times, 3–6 times, or 7+ times.

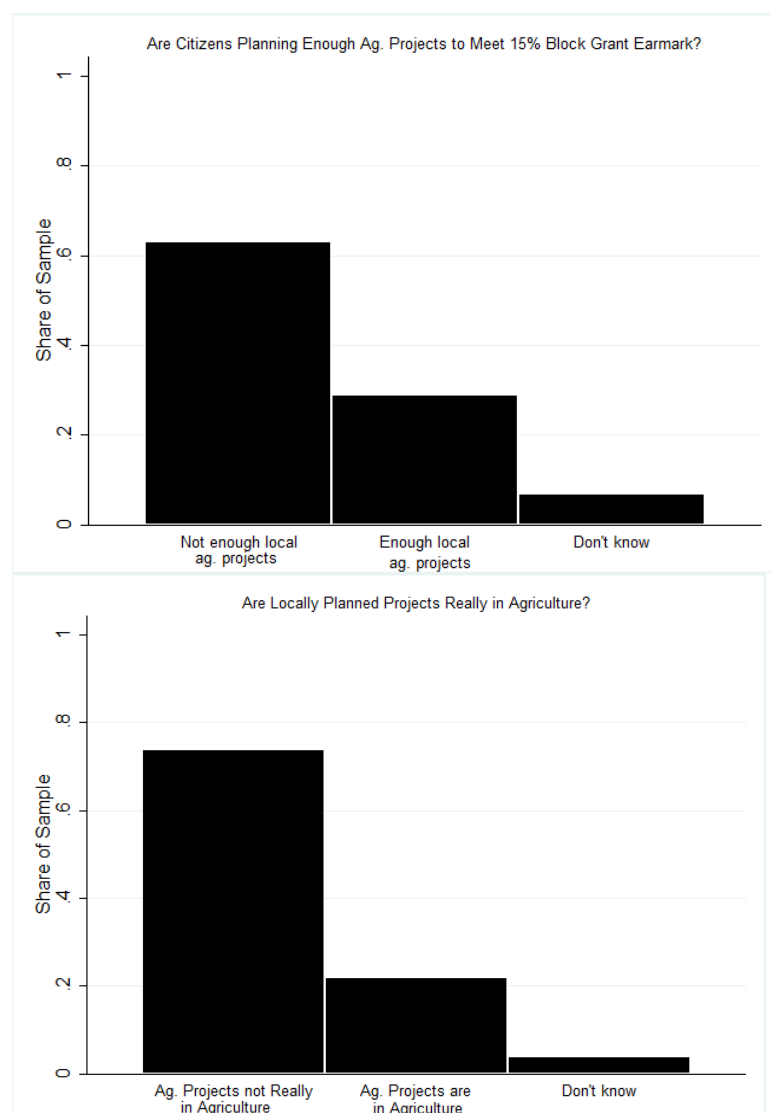
Incentives

There may be a trade-off between giving greater financial autonomy and creating incentives to meet national development goals. For instance, Boex (2012a) notes that the block grants to VDCs are not entirely unconditional in practice given that local bodies need to spend specific shares of the grants on children (10 percent), women (10 percent), and marginalized or disadvantaged groups (15 percent). Since the 2012 financial year, VDCs have also needed to allocate 15 percent of their block grants to agriculture. These earmarks limit the ability of local bodies to spend on local development priorities and prevent them from aggregating resources to fund a few key projects. This contributes to the fragmentation of spending on many small projects at the local level. Allowing national development priorities to set the spending guidelines for local-body grants limits the usefulness of the participatory local planning process and the extent to which local bodies can pursue local goals.

However, devolving full expenditure authority to local government units over policy areas that have been deemed a national priority may create a disincentive to meet national development goals. For example, there is reason to believe that if spending earmarks for VDC and DDC block grants were lifted, local spending patterns would not match with national priorities, particularly in the agricultural sector. The federal government currently earmarks 15 percent of VDC and DDC block grants for agricultural development projects, but 62 percent of DADOs in the survey sample reported that not enough agricultural projects are planned locally to meet the earmark (Figure 3.5). Further, 74 percent of DADOs noted that the local agricultural projects that are planned aren't actually specific to the agricultural sector (Figure 3.5). For example, the projects funded under the DDC block grant earmarked for agriculture are in fact used for building local roads. In all, only 6 percent of surveyed districts plan local agricultural

development projects that are actually in the agricultural sector and are sufficient in quantity to meet the 15 percent requirement for VDC and DDC block grants.¹²

Figure 3.5 Lack of local demand for agricultural projects



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADO = District Agricultural Development Officer; DLO = District Livestock Officer.

These findings are in line with previous research. Before the central government began requiring that 15 percent of VDC and DDC block grants be spent on agricultural development projects in 2012, few resources from local-body block grants were allocated to such projects. A 2006–2008 UNDP/Inlogos assessment of the use of VDC block grants found that only 2.5 percent of VDC block grant resources were used to fund agricultural and irrigation projects (Inlogos 2009). This suggests that there may be

¹² This doesn't necessarily mean that only 6 percent of surveyed districts are meeting the 15 percent DDC block grant earmark for agriculture. In many districts, DADOs and their staff step in to help plan or suggest projects to ensure that this 15 percent requirement is met. It means only that not enough agricultural projects are being planned by citizens through the Fourteen-Point Planning Process.

relatively low demand for allocating local-body block grants towards agricultural development in Nepal.¹³ Thus, devolving responsibility for agricultural budgeting without providing incentives to meet national agricultural development goals could result in dramatically lower overall levels of government spending in the sector. This issue will be addressed in case studies in Section 4, as well as in the specific policy recommendations in Section 5.

Coordination

Currently, there is a lack of coordination in monitoring and reporting local-body finances but a strong degree of coordination with respect to keeping agricultural objectives in perspective through the planning process. Specifically, while MoFALD and the Local Bodies Fiscal Commission (LBFC) are concerned with monitoring grants and devolved expenditures to local bodies, the MoF and National Planning Commission are more interested in monitoring deconcentrated expenditures from line ministries (Boex 2012a).¹⁴ Going forward, this coordination gap may be alleviated if the MoF oversees all expenditures, especially if the National Resources and Fiscal Commission is established and placed under this ministry.

At the same time, the current deconcentrated structure allows for the national government and development regions to oversee adoption of agricultural priorities within districts and VDCs. The elections foreseen under the new Constitution at both the province and local government levels will make coordination more difficult. For example, it will be challenging—if not impossible—for Nepal to meet the goals set forth within the ADS by trying to set the spending requirements for local government bodies for funds allocated for agriculture and then trying to match locally planned projects with national priorities. This limits the ability to both pursue the ADS coherently and to use participatory planning processes to create projects that are truly locally prioritized and planned. Strong consideration of sectoral coordinating units, across both agricultural-related ministries and different levels of government, will be essential to ensure that strategies such as ADS—and broader development objectives, including the Sustainable Development Goals—can be achieved.

Agricultural Research in Nepal

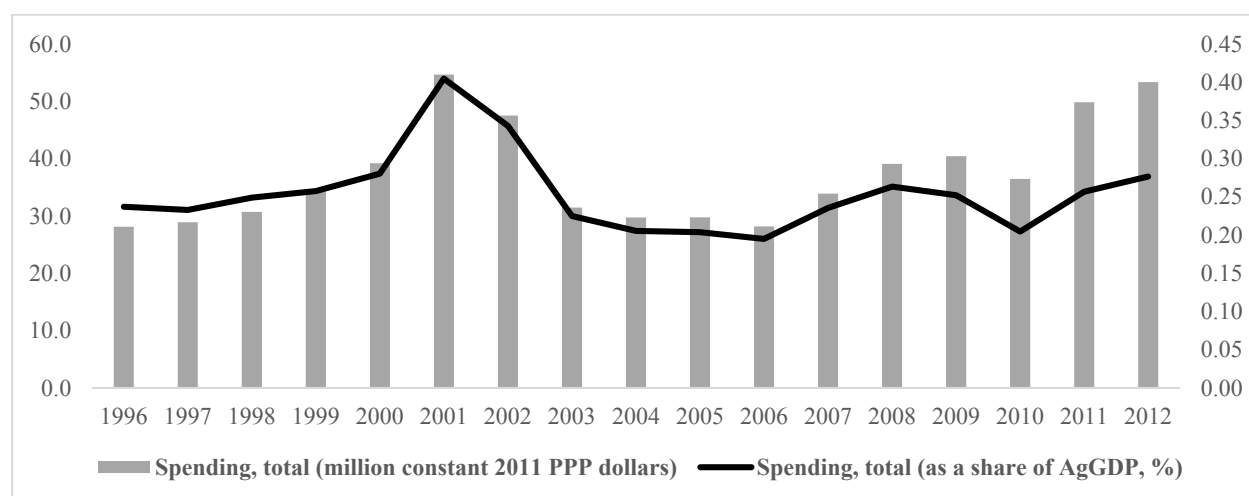
Status of Agricultural Research in Nepal

One of the major concerns in the restructuring process is where responsibilities for agricultural research should lie since, as Table 2.1 shows, research and development (R&D) is allocated to both the federal and province levels in the new Constitution. In general, government support for agricultural R&D has been volatile over the last decade. Public expenditures declined after the conclusion in 2002 of the World Bank's Agricultural Research and Extension Project, but rebounded after the end of the civil war in 2006. By 2012, total spending in PPP USD was approximately 53 million, which was equivalent to about 0.28 percent of agricultural GDP (Rahija et al. 2011). This includes salaries, operating costs, and capital investments and encompasses all government, higher education, and nongovernmental agencies (Figure 3.6).

¹³ On the other hand, the earmark may serve as an inadvertent cap on agricultural spending in areas where agricultural development projects are in high demand. This seems unlikely given the low reported demand for local agricultural projects.

¹⁴ See Boex (2012a) for consideration of how the allocation formulas may be reconsidered, including under the new federal structure.

Figure 3.6 Trends in agricultural research and development expenditures in Nepal



Source: Data from Agricultural Science and Technology Indicators (ASTI) (2016).

The main government agricultural R&D agencies in Nepal are the Nepal Agricultural Research Council (NARC), the Nepal Academy of Science and Technology (NAST), and the Department of Forest Research and Survey (DFRS).¹⁵ While NARC is institutionally under the MoAD, NAST and DFRS are administered by the Ministry of Science and Technology and the Ministry of Forest and Soil Conservation, respectively. Since NARC accounts for approximately 70 percent of the country's agricultural research capacity and receives approximately 75 percent of its funding from the government, it is the main focus here (NARC 2016; Rahija et al. 2011).

Established in 1991 under the Nepal Agricultural Research Council Act, NARC was intended to be an autonomous body (GoN 1992). It represents one of the key stakeholder organizations involved in helping to formulate government agricultural policies and operates two research institutes: the National Agricultural Research Institute (NARI) and the National Animal Science Research Institute (NASRI). There are currently 61 research centers under NARC in Nepal, inclusive of the central office in Kathmandu, as well as research stations in different parts of the country to cater to Nepal's main agro-ecological zones and development regions. In addition, there are more than a dozen research stations for specific commodities.¹⁶

One of the main challenges facing NARC is insufficient human capacity. In 2011, 400 posts were unfilled; by 2016, only 600 out of 1,300 positions had been filled.¹⁷ Rahija et al. (2011) claim that the difficult entrance exam is one of the reasons why critical posts remain vacant. Currently, NARC conducts its own recruitment rather than requiring applicants to go through the Public Service Commission (PSC), which typically is responsible for recruitment into the government.¹⁸ Another challenge is that younger, junior scientists typically have only a BSc, while older researchers have PhDs but are constrained by NARC's low retirement age of 60. As more researchers retire, the gap in expertise within the organization widens (Rahija et al. 2011). As seen in Table 3.1, Nepal has one of the lowest ratios globally of Full-Time equivalent (FTE) researchers per 100,000 farmers, ranking on par with highly agrarian economies in Africa.

¹⁵ Other important institutions in agricultural R&D in Nepal include Tribhuvan University, as well as a number of NGOs and a private-sector livestock feed company known as Probiotech Industries (Rahija et al. 2011).

¹⁶ These include rice, wheat, maize, grain legumes, oilseed, sugarcane, citrus, potato, jute, ginger, hill crops, bovine, sheep and goats, swine, and avian research programs.

¹⁷ Interview with NARC, Kathmandu, January 13, 2016.

¹⁸ Interview with NARC, Kathmandu, January 13, 2016.

Table 3.1 Global comparisons of agricultural research capacity

Selected countries	Total FTE researchers per 100,000 farmers	Most recent year
Malawi	3.2	2010
Burkina Faso	3.2	2010
Nepal	3.6	2012
India	4.6	2011
Bangladesh	6.6	2012
Kenya	8.4	2011
Pakistan	14.5	2012
Sri Lanka	15.5	2009
Nigeria	21.6	2011
South Africa	63.4	2011
Costa Rica	75.9	2012
Malaysia	102.8	2010

Source: Data from Agricultural Science and Technology Indicators (ASTI) (2016).

Notes: Numbers are exclusively for the public sector and exclude the private, for-profit sector. FTE = full-time equivalent.

NARC has difficulty not only finding potential employees but also retaining them. Without a guaranteed pension and no extra remuneration for researchers vis-à-vis extension officers, NARC finds many of its employees deciding to move to extension work or to find jobs overseas. According to Stads (2015a), salary levels at NARC are one-half to one-tenth of those offered by the private sector and NGOs, and a PhD qualification does not affect salary levels for those pursuing a career in agricultural R&D. A survey of motivations among NARC researchers found that promotion opportunities and performance-based evaluations would help give them an incentive to remain with the organization. Currently, all employees receive the same salary (Stads 2015a). These and additional concerns should be taken into account when deciding how to proceed with implementing the federal structure.

Collectively, these challenges result in inadequate levels of agricultural research: more than 80 percent of DADOs and DLOs stated that there is not enough research on crops and livestock that are important in their districts. In particular, numerous DLOs expressed a desire for more needs-based research on livestock disease to enable them to help farmers in a timely fashion. One DADO reported that a lack of agricultural research on relevant crops and varieties leads farmers in his district to go across the border into India to access the latest research and farming methods.

Implications of Constitutional Reforms for Agricultural Research

Authority

First and foremost, the new Constitution will have implications for authority (that is, which level of government is responsible for various agricultural research activities). As noted in the 2015 Constitution, “scientific research, science and technology and human resources development” will be a concurrent power of the federation and the new province governments.¹⁹ This provides some leeway for NARC to determine which functions it currently performs that are most appropriate at the national level and which should be decentralized. NARC’s management has been considering an option where it conducts basic research at the central level while verification experiments occur at the provincial level.²⁰ This is, in theory, the option recommended by experts in this domain. Due to economies of scale and the high costs of agricultural research, Byerlee and Traxler (2001) argue for the centralization of research that is broadly applicable across a given territory or country, such as crop improvement activities that apply across diverse agro-systems. In Nepal, for instance, this would relate to widely grown crops such as rice, potato,

¹⁹ See 2015 Constitution, Schedule 7.

²⁰ Interview with NARC, Kathmandu, January 13, 2016.

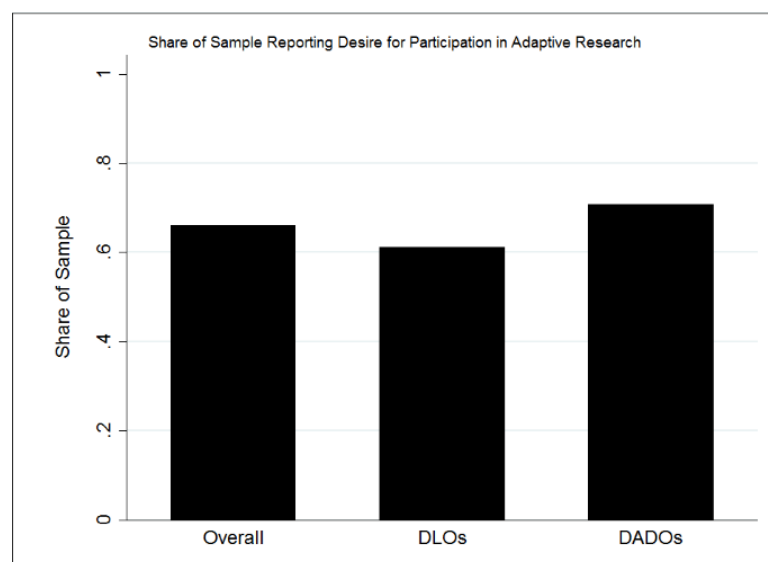
and citrus. Yet, for research with local relevance due to location-specific nature of crop cultivation or livestock management, there should be decentralized research activities. This approach also corresponds to Nepal's ADS, which specifies "a decentralized research system responsive to farmers and agro-enterprise needs" as one of its 35 outputs (Nepal, MoAD 2013).

In concrete terms, NARC is considering operationalizing this approach in a number of ways. First, a national research institute such as NARI could have a central mandate under NARC, but there could also be research institutes within each province. Second, NARC is considering whether to establish a separate research station in each province for each separate agro-ecological zone. This could mean up to three agricultural research stations in a single province for those provinces that encompass all agro-ecological zones. Third, agricultural mechanization stations could be established for the various zones, with two in the Terai and one each in the mid-hill and mountain zones.²¹

Given its uncertain status under the Constitution, it is difficult to devise a strategy that gives enough authority over agricultural research to the provincial level while working within capacity constraints. There are two primary issues to keep in mind in formulating an approach. The first concerns the ability to find sufficient staff and resources to establish such a large number of subnational institutes and research stations, given existing capacity constraints. Indeed, whether every province needs a station for every agro-ecological zone is questionable, especially if NARC at the central level can play a facilitating role in sharing agro-ecological specific findings across provinces when applicable.

An encouraging result from our survey is that two-thirds of DADOs and DLOs reported wishing that the technical staff in their districts could be more involved in adaptive research, for example, testing technologies in the field (Figure 3.7). In fact, one of the successful models for giving subnational governments more autonomy over research is to involve extension agents in adaptive research, as in India's Krishi Vigyan Kendras (KVK) model discussed in Section 4. Survey results indicate that DADOs and DLOs would be receptive to this approach, which would allow for more local research without necessarily generating high local staffing burdens.

Figure 3.7 Participation in adaptive research



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: Exact question wording is as follows: Are any of the following challenges for agricultural research in your district? The technical staff in my district are not involved enough in adaptive research (for example, testing technologies in the field [Yes/No/Don't Know]). DLO = District Livestock Officer; DADO = District Agricultural Development Officer.

²¹ Interview with NARC, Kathmandu, January 13, 2016.

The second issue concerns how such a decentralized system will be financed. Byerlee and Alex (1998) note that federal funding is typically used to support agricultural research, since provincial and local governments do not have incentive to finance research with interjurisdictional spillovers. However, where the benefits are more localized due to the specificity of the research, subnational governments do typically need to help with the fiscal burden. However, as already seen, subnational governments in Nepal already face a strong vertical imbalance and heavy dependence on intergovernmental transfers. As one interviewee noted with regard to NARC, “Right now, there are effectively 14 research stations, and many of these are dysfunctional and have a high cost to the treasury and so maybe they could be managed by the agricultural service centers or NGOs.”²² Following recommendations for the overextended U.S. agricultural research system (Robinson 1997), one option may be to create centers of excellence related to agro-ecological conditions that would be based in different provinces. We address this specifically in the case studies in Section 4 and in the specific policy recommendations given in Section 5.

Autonomy

The new Constitution offers a window of opportunity to resolve longstanding concerns about NARC’s autonomy. While the NARC Act of 1992 stipulated that the organization should be autonomous, this has not happened in practice and continues to be a major point of contention (Stads 2015a). Byerlee and Alex (1998) emphasize that research is inherently different from other aspects of agricultural policy because it requires flexibility in funding, staff, and equipment. Consequently, national agricultural research organizations should have greater autonomy in these areas to ensure recruitment of specialized staff, and to pursue “lumpy” investments in infrastructure that are essential for experimental work.

According to Byerlee and Alex (1998), achieving full autonomy would require attention in at least six domains:

- *Governance* – board and chief executive officer are chosen transparently and unbiased by political intervention
- *Research programs* – independent control over program funding, formulation, and implementation
- *Personnel management* – hiring, firing, promotions, and career training
- *Administrative procedures* – independent decisions about procurement of supplies, equipment, and personnel services
- *Financial management* – ability to obtain funding from any source, retain and use generated income, and establish procedures for disbursement
- *International collaboration* – independent decisions to enter agreements with international institutions for research and purposes of scientific exchange

In Nepal, the governance, personnel, financial management, and administrative aspects deserve particular attention. The Minister of Agriculture chairs the NARC executive council. But with one of the world’s highest turnovers of agricultural ministers over the last decade (Quinn and Gupta 2013), this has resulted in frequent changes in NARC leadership.²³ Removing responsibility for NARC from MoAD is one option. This would reinforce Byerlee and Alex’s (1998) claim that since research requires engagement with a diverse array of stakeholders, ranging from the private sector to multiple ministries involved in agriculture, it should not be controlled by one line ministry.

²² Interview with Center for Environmental and Agricultural Policy Research, Extension, and Development, Kathmandu, January 14, 2016.

²³ Interview with Center for Environmental and Agricultural Policy Research, Extension, and Development, Kathmandu, January 14, 2016.

In terms of personnel, NARC already pursues its own recruitment, as noted earlier. Yet, the new constitution stipulates that staff of all entities receiving at least 50 percent of government funding, which includes NARC, be recruited through the national PSC.²⁴ Transforming NARC scientists into civil servants could preclude NARC from identifying highly specialized researchers, and could hinder its flexibility to create a competitive market with incentives and rewards to address current staff retention challenges. Financial management is strongly interrelated to recruitment concerns, since heavy dependence on government resources is a motivation for this new personnel strategy in the Constitution. Competitive funds and private-sector financing are two potential sources for helping with financial diversification. Finally, Stads (2015a) notes that with regard to administrative procedures, there needs to be greater streamlining of the government's complex and bureaucratic procurement procedures for securing capital goods and for building construction that affects NARC.

Accountability

Achieving greater autonomy in turn requires greater accountability in at least two respects. First, there would need to be clear strategic milestones and outcome indicators by which NARC's funders could assess progress over time. For example, in the United States, the Current Research Information System provides documentation of ongoing activities being conducted with public expenditures on agricultural R&D.²⁵ Second, and relatedly, if subnational government at either the provincial or local level contributes financially to the decentralized research stations or planned provincial research institutes, then NARC would need to be accountable for its outputs to multiple levels of government.

Incentives

Incentives to encourage staff retention should be tackled during this period of restructuring. One option is to simply provide more promotional opportunities than currently exist, as well as rewards for good performance (and sanctions for bad performance), which has helped improve agricultural research retention in countries such as Senegal and Ghana (Stads and Beintema 2014). Another important consideration is ensuring that, at the minimum, the pay scale between NARC and other research universities, such as Tribhuvan University (TU), is not disproportionately different.

The challenge for NARC's potentially decentralized units in the provinces will be to ensure adequate incentives to encourage staff to work in more remote areas and potentially under very different provincial governments, with various levels of capacity and commitment to agricultural research. This would require providing a type of "hardship" allowance, or additional pay, to provide staff with the incentive to move to those areas. There needs to be greater consideration of this option in light of existing plans under the forthcoming federal structure for staff at agricultural research stations at the province level to be recruited from the central PSC.²⁶ Again, this will circumscribe the autonomy of NARC. Moreover, it may also undermine the authority of provincial governments, which can be especially problematic depending on whether and to what degree they will be contributing to financially supporting the agricultural research stations in their respective provinces.

Coordination

In terms of coordination, the most important consideration going forward will be how to improve synergies between research and extension. A survey conducted by Suvedi and McNamara (2012) found that the lack of communication between research and extension was one of the top problems with Nepal's extension services.

While NARC and extension services are both currently under the authority of the central government, in the federal system extension will be under the mandate of the new provinces. A perceived disconnect already exists between research and extension, with few communication mechanisms between

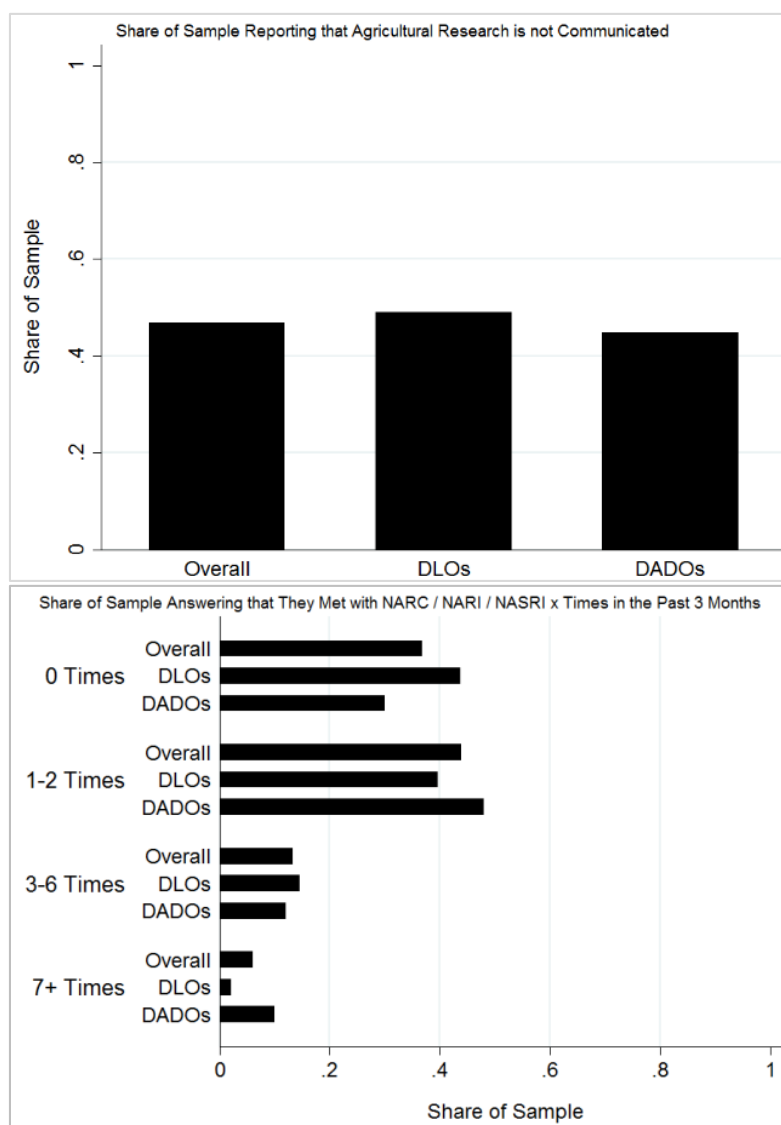
²⁴ Interview with NARC, Kathmandu, January 13, 2016.

²⁵ See <http://cris.csrees.usda.gov/>.

²⁶ Interview with NARC, Kathmandu, January 13, 2016.

research and field extension agents. Consequently, findings on the latest technologies or improved farm practices are not being communicated to farmers in a timely manner (Suvedi and McNamara 2012). This disconnect was reflected in the DADO/DLO surveys as well, with 46 percent of DADOs/DLOs reporting that lack of communication about existing agricultural research is a problem in their district (Figure 3.8). It can also be seen in the infrequency of meetings between NARC officials and DADOs/DLOs, with nearly 40 percent reporting that they had not met with any official from NARC, NARI, or NASRI during the three months before the survey (Figure 3.8).

Figure 3.8 Lack of communication between research and extension



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DLOs = District Livestock Officers; DADOs = District Agricultural Development Officers; NARC = Nepal Agricultural Research Council; NARI = National Agricultural Research Institute; NASRI = National Animal Science Research Institute. Exact question wording is as follows: Are any of the following challenges for agricultural research in your district? Agricultural research that is being conducted is not communicated well to me (Yes/No/Don't Know). For second graph, question wording is: Please indicate how often you met with NARC, NARI, or NASRI during the past three months (Never, 1-2 times, 3-6 times, 7+ times).

Decentralized research stations may improve ties to the already decentralized extension agents. However, it will be important that the different lines of accountability anticipated in the new structure (that is, upward accountability from research stations to NARC and downward from extension agents to elected local governments) do not further exacerbate existing weak ties. This will be especially true if elected parties at the province and local levels are different from those governing at the federal level, possibly creating difficulties with the chain of command and collaboration.²⁷

Agricultural Extension System in Nepal

Status of Agricultural Extension System in Nepal

Nepal's extension system is highly pluralistic. In the public sector, extension is provided under the Department of Agriculture in MoAD and in the Department of Livestock Services in the Ministry of Livestock Development (MoLD). In the education system, extension is provided by the Council for Technical Education and Vocational Training and TU. In addition, the private sector plays an active role in offering improved seed, pesticides, and artificial insemination for livestock, among other services (Suvedi and McNamara 2012). Likewise, there are a number of NGOs in especially remote rural areas that provide extension services to farmers, including CEAPRED Nepal and PLAN Nepal (Sharma 2011). This paper, however, focuses exclusively on the public extension system.

In the public system, the intention of extension is to educate farmers to make informed decisions regarding adoption of new technologies, foster strong ties between research and extension, and monitor adoption of new innovations. With the LSGA, agricultural extension services were devolved to the district level. These services are now organized in a network within the five development regions, 75 districts, and agricultural and livestock service centers at the *Ilaka* level, which encompasses multiple VDCs. Junior technicians work at the *Ilaka* level and report to the DADO or DLO. In order to access extension services, an individual must be a member of a farmers' group and registered with a DADO. According to Suvedi and McNamara (2012), approximately 22,000 farmers' groups and more than 1,500 dairy cooperatives exist. Sometimes DADOs also provide training to input sellers who are then expected to pass on technical services to their farmer customers, thereby enhancing the value-added of their inputs. DADOs may also support seed producer groups, monitor seed quality, and distribute seed subsidies. In addition, along with DDCs and VDCs, DADOs may help construct or oversee the management of markets where farmers sell their output (Root 2014). Extension services from the DLO focus on educating farmers on best practices for livestock production and animal health, artificial insemination services, poultry management, forage and fodder crops, and disease prevention in farm animals (Suvedi and McNamara 2012). The Agricultural Information and Communication Center (AICC) helps to disseminate extension information through programs on Radio Nepal, video documentaries, and a variety of booklets and magazines. Due to electricity outages, in addition to limited connectivity and computers, the use of information and communication technology for extension remains limited (Suvedi and McNamara 2012).

There are a number of concerns with the current system. First, access to extension is relatively uneven across the country. For example, the most recent Nepal Living Standards Surveys found that better access to agricultural service centers is correlated with lower levels of poverty (Nepal, CBS 2011). As one interviewee noted, since districts have a different range of cultivated land, the distribution of resources should be determined by the number of farming households residing in them.²⁸ Notably, the ADS has stressed that extending coverage and improving equity of agricultural extension services will be a priority (Nepal, MoAD 2013).²⁹ For a country that remains relatively dependent on public-sector

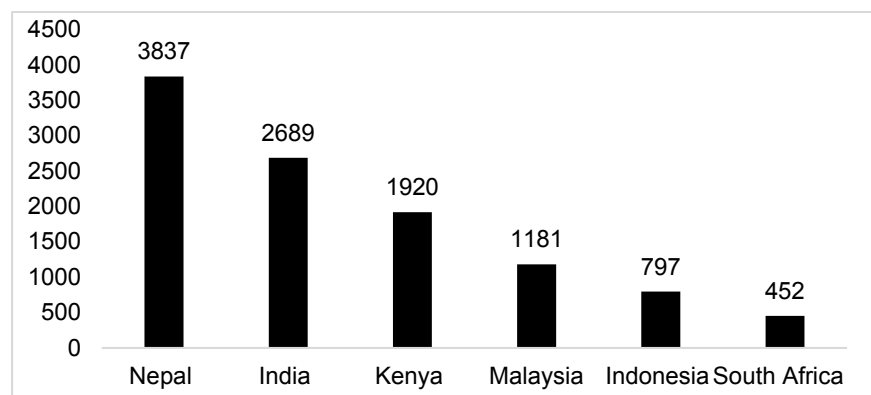
²⁷ See Weingast (2014) for further discussion of how different political parties at the national and state levels can have important implications for how well federalism operates.

²⁸ Interview with Policy and International Cooperation Coordination Division, MoAD, Kathmandu, January 11, 2016.

²⁹ During interviews in January 2016, we were informed that 3,000 new positions (1,500 technicians for livestock and 1,500 technicians for agriculture) would be hired in 2016 to improve capacity. This had been announced in the Minister of Finance's 2016 budget speech.

extension services, as Figure 3.9 shows, Nepal has comparatively few public extension agents, as indicated by the high number of agricultural workers served by one extension officer (that is, a ratio of 1 for every 3,837 workers).

Figure 3.9 Ratio of agricultural workers to public agricultural extension agents



Source: Calculated from data in Swanson and Davis (2014), World Development Indicators (World Bank 2016), and Food Security Portal (2016).

Nepal's comparatively low ratio of agricultural extension workers to agricultural workers is due not only to insufficient resources dedicated to hiring agricultural staff, but also to the fact that existing positions are not staffed in a timely fashion. On average, DADOs and DLOs reported that 18 percent of total positions in their districts were vacant at the time of the survey, with some reporting that as many as 90 percent of positions were vacant (Figure 3.10). In all, 85 percent of DADOs and DLOs stated that they do not have enough technical staff to deliver service (Figure 3.10). Lack of adequate staff severely strains their ability to fulfill basic job functions. In interviews, DADOs and DLOs claimed that they "are struggling," "are hardly managing," and "are working with whatever we have." One DADO succinctly stated the key problem with local policy implementation: "At the central level, there is more staff and fewer programs, while at the local level it is exactly the opposite." As more and more programs move to the local level as a result of federal reforms, addressing this imbalance will be vital.

Figure 3.10 Lack of adequate staff to deliver services

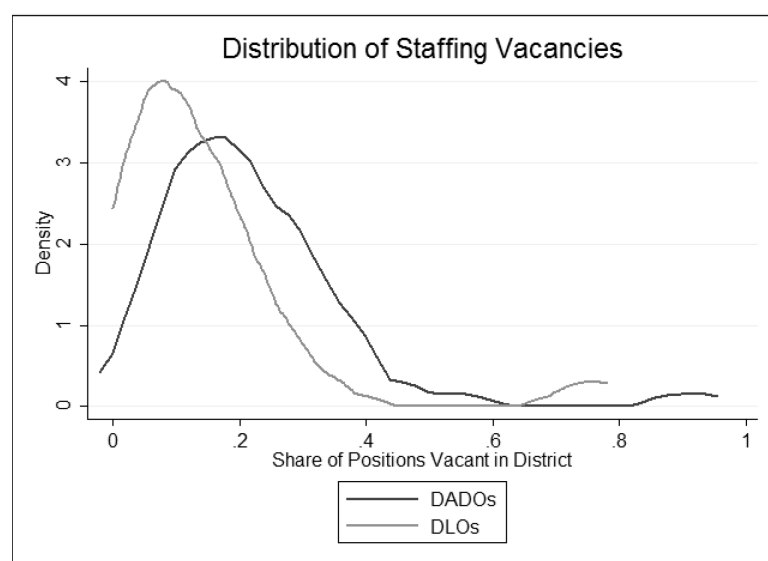
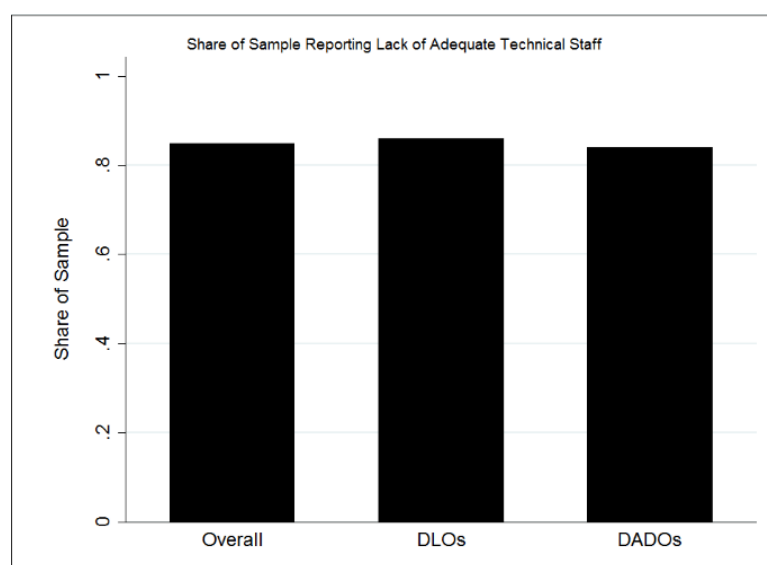


Figure 3.10 Continued



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: Graph on left is a kernel density plot of percent of total staff positions in the district reported to be vacant by DADOs and DLOs. Graph on right is for answer to question: There are not enough technical staff to deliver agricultural services in this district (Yes/No/Don't Know). DADOs = District Agriculture Development Officers; DLOs = District Livestock Officers.

Second, few extension workers have the needed technical knowledge of improved production practices or the relevant skills in marketing and supply chains needed for improving value chains. Only 11 percent of technical staff at the district level overseen by DADOs and 6 percent of the technical staff at the district level overseen by DLOs have bachelors' degrees. Staff also lack adequate training. Only one-third of DADOs/DLOs thought agricultural education programs adequately prepare technical staff for the challenges of working in agricultural services in the district, and 68 percent reported that the technical staff in their districts lack the skills to apply the results of agricultural research in their work. Nearly two-thirds of DADOs/DLOs suggested that more on-the-job training opportunities are needed to raise capacity.

Third, agricultural extension officers are civil servants rotated approximately every two years, preventing them from forming long-term relationships with farmers, building trust, and developing area-specific expertise. Thirty percent of surveyed DADOs and DLOs have served in their current district for less than two years.³⁰ This issue may be improved under the new federal system, as staff become employees of provincial governments and therefore less likely to be transferred around the country. However, paying attention to incentives to retain staff in remote areas will be important and is addressed below.

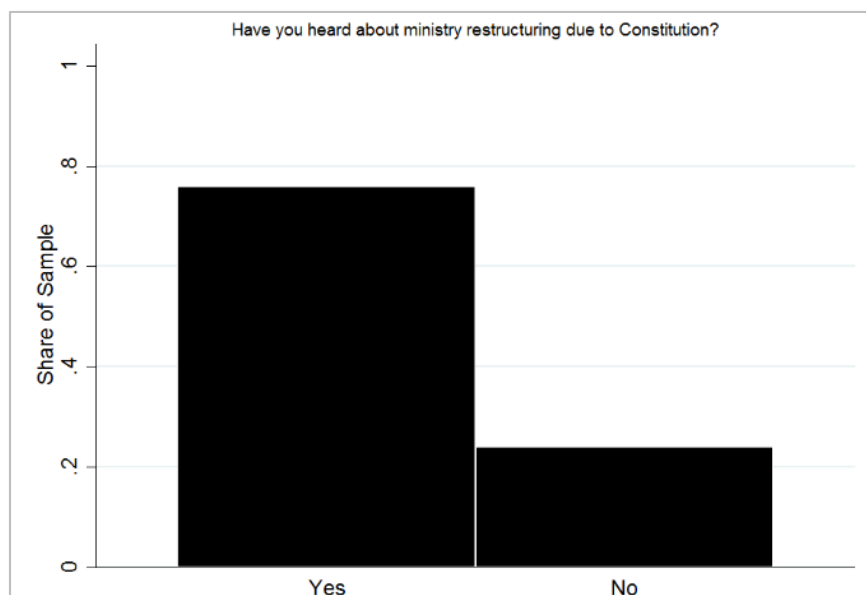
³⁰ If the DADO or DLO previously served in another position within the same district, we count this as time served in the district. For example, if a DLO has served in that capacity for only one year but previously served as a Livestock Extension Officer in the same district, then we count the time served in the district as the sum of the two periods of service.

Implications of Constitutional Reforms for Agricultural Extension

Authority

For authority, the Constitution clearly specifies that agricultural extension will be an exclusive responsibility of local government.³¹ In this way, there should be no ambiguity created by concurrent functions of other levels of government. Despite the clarity of the Constitution on this matter, 20 percent of DADOs/DLOs reported having no knowledge that the agricultural extension system may be restructured due to the Constitution (Figure 3.11). Knowledge was lowest among those posted in more remote areas. Even among those who had heard about the potential restructuring, many received the news from the media or other outside sources rather than the line ministries themselves, which could increase uncertainty and confusion among civil servants.

Figure 3.11 DADO/DLO awareness about ministry restructuring due to constitutional reforms



Source: Authors' compilation from DADO/DLO Survey (2016).

Note: DADO = District Agricultural Development Officer; DLO = District Livestock Officer

Given the constraints at the local level in Nepal's agricultural extension system, it may be difficult to distribute authority to the provincial level if the capacity does not exist to fulfill the responsibility of that authority. Moreover, it is clear from the DADO/DLO survey that the proposed provinces will not necessarily be equally equipped to take responsibility for service delivery. Some provinces have a higher share of DADOs/DLOs who lack local ties to the province, having served in their posts for less than two years. Others have higher rates of staff vacancies and/or higher percentages of staff that are nearing retirement age. Table 3.2 reports the number of DADOs/DLOs who have served in their district for less than two years, the number who are within five years of retirement,³² the rate of staffing vacancies, and the percentage of staff within the district who are within five years of retirement for each of the seven proposed provinces. In order to report by province, we utilize the proposed provincial boundaries as specified in the 2072 Constitution (reported in Appendix Table A.2).

³¹ Interview with MoA, Kathmandu, January 11, 2016.

³² We calculate this based on the age of the DADO / DLO at the time of the survey and a retirement age of 55.

Table 3.2 Uneven capacity in agricultural service delivery by proposed provinces

Province	Share of DADOs/DLOs who have served in district for < 2 years	Share of DADOs/DLOs within 5 years of retirement	Rate of staffing vacancies	Share of staff within 5 years of retirement
1	5%	45%	22%	11%
2	42%	83%	13%	21%
3	36%	79%	19%	13%
4	25%	81%	17%	14%
5	57%	36%	21%	12%
6	30%	40%	14%	5%
7	14%	64%	16%	8%

Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADOs = District Agricultural Development Officers; DLOs = District Livestock Officers

So, for example, in province 1 in far eastern Nepal, there are few DADOs or DLOs who have served for less than two years in their districts. This may make it easier for this province to retain these high-level staff upon the devolution of agricultural service delivery. Their local ties may also enable them to deliver higher quality services more quickly upon devolution, since they already know their districts well. By contrast, province 5 in midwestern Nepal could face serious problems in retaining staff, with 57 percent of DADOs and DLOs having served for less than two years in their districts. Province 5 also faces high rates of staffing vacancies overall, suggesting it may have significant challenges in hiring and retaining staff. Provinces 2, 3, and 4—while having DADOs/DLOs who have served relatively longer in their posts—also have a preponderance of DADOs/DLOs nearing retirement age.

Given that the provinces will start out with uneven capacities and will need time to build up capacity, taking a gradual approach to devolution, as recommended in Section 5, will be crucial. Some provinces may need additional resources to build this capacity.

Accountability

Currently, extension is not genuinely devolved but rather deconcentrated and, consequently, extension agents are accountable to the central MoAD or MoLD (also, see Figure 3.3).³³ Under the new Constitution, there is the potential for greater bottom-up accountability to elected local leaders rather than to the line ministries in Kathmandu.³⁴ In this way, extension could be better targeted to farmers' needs in a particular agro-ecological or regional area. This accountability is effective only if local governments also contribute financially to extension activities (Swanson and Rajalahti 2010).

These accountability relationships could significantly ease and clarify current relationships between agricultural service providers and local politicians. As seen in Figure 3.4, DADOs and DLOs currently have to meet frequently with local politicians who are affiliated with an array of political parties, none of whom have been elected as the representatives of local citizens. Holding local elections will increase the accountability of these local politicians to citizens, and may reduce the number of parties local civil servants have to manage.

Incentives

The challenge to doing so will, however, be shaped by human resource incentives. DADOs/DLOs currently lack the autonomy to handle human resources at the local level. Two-thirds reported that they can take no action beyond writing a letter in an employee's file when an employee is performing poorly. Not surprisingly, then, 59 percent of DADOs/DLOs said that their employees lack motivation. In interviews, several expressed the desire to be able to establish local incentives for their employees to improve morale and performance.

³³ Interview with CEAPRED, Kathmandu, January 14, 2016.

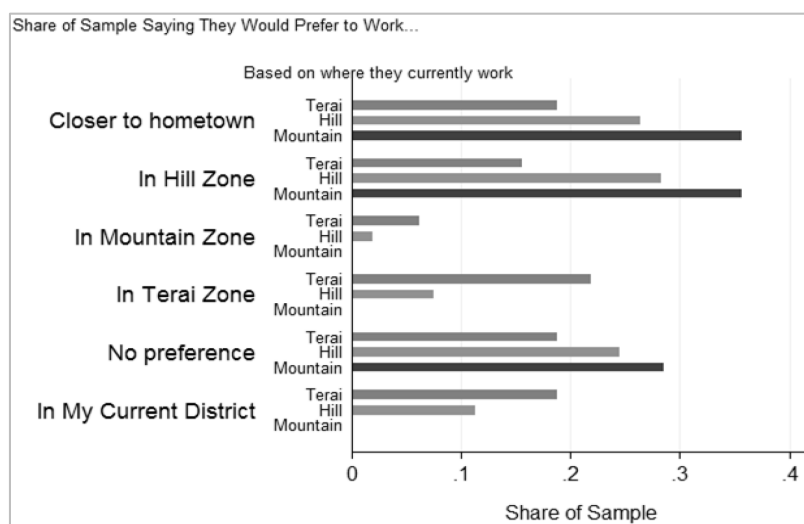
³⁴ Suvedi and McNamara (2012) note that the lack of elected local leaders for the last decade has severely undermined the ability of extension agents to be responsive to farmers' needs.

Under the new Constitution, extension workers will be retained as civil servants and will be recruited under a provincial-level PSC.³⁵ This should help reduce the degree to which agents are rotated geographically by limiting their movement to provinces rather than across the entire country. However, it is not yet clear whether the new subprovincial local governments, which should henceforth have authority over extension, will be able to exercise effective oversight of and demand responsiveness from extension agents hired at the provincial level. Giving local governments the autonomy to set incentives for performance is an important step to improving employee performance.

In addition, greater consideration should be given to providing top-up pay to encourage agents to go to more remote areas of the provinces.³⁶ On the one hand, it is promising that 35 percent of DADOs/DLOs either have no preference where they serve or would like to continue on in their current district (Figure 3.12). An additional 25 percent said they would rather serve closer to their home districts. This suggests that a policy allowing civil servants to transfer to serve under subnational governments close to their hometowns—as done during the “big bang” decentralization in Indonesia—could have some success in Nepal. Even more encouraging is the fact that when given a choice between continuing in their current position, advancing to a higher position within MoAD/MoLD offices at the federal level in Kathmandu, and advancing to a higher position within MoAD/MoLD offices at the provincial level, one-quarter of DADOs and DLOs said that they aspired to a higher position within their respective line ministries at the provincial level (Figure 3.13). This is remarkable given that this level of government has not yet been created nor the positions within it solidified, and suggests a high degree of willingness among civil servants to adjust expectations from working within the federal civil service to working within the subnational civil service.

On the other hand, half of DADOs/DLOs expressed concerns about the prospect of being moved to an undesirable location as a result of the new federal structure. None currently serving in the mountain areas reported aspiring to continue to serve in those areas; all wanted to serve closer to the capital, in the hill region, or near where they were born (Figure 3.12). This suggests that incentives may be needed to retain civil servants in remote areas.

Figure 3.12 Staff retention in remote areas



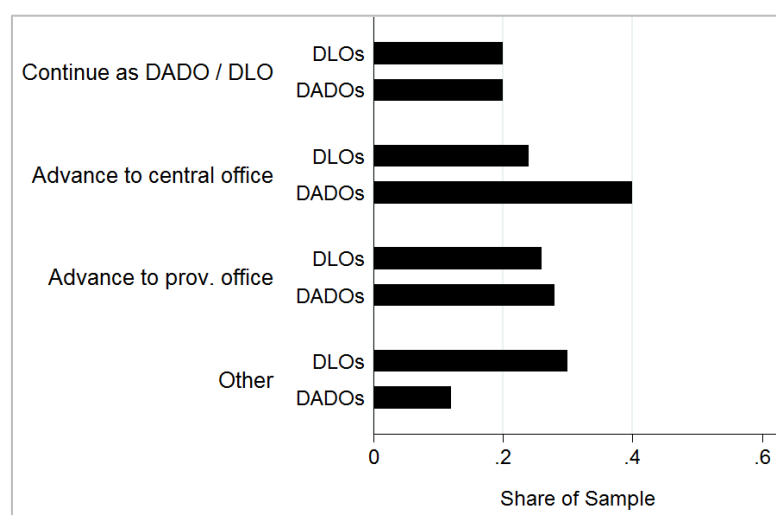
Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADO = District Agricultural Development Officer; DLO = District Livestock Officer. Question wording is: “If you had the choice of moving tomorrow, where would you prefer to work?”

³⁵ Interview with NARC, Kathmandu, January 13, 2016.

³⁶ We were informed that this incentive system was considered in the early 2000s. However, the profiles of extension staff indicated that they were predominantly from a small group of districts where technical and vocational education centers were located, and therefore would not have sufficient expertise to go to different areas.

Figure 3.13 DADO/DLO career aspirations



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADO = District Agricultural Development Officer; DLO = District Livestock Officer. Question wording is: "What type of career position would you like to hold in 5-10 years? (Continue as DADO/DLO; Advance to a higher position within MoAD/MoLD in the national-level office in KTM; Advance to a higher position within MoAD/MoLD in a provincial-level office; Advance to a higher position within the civil service but work in another ministry; Career in the private sector; Career with an NGO/donor; Retire from working; Other."

Another incentive mechanism is to require agricultural extension agents to complete a required number of training hours every few years in order to retain their jobs. This approach, which is used in the U.S. Cooperative Extension Model and in the South African case discussed later, helps ensure that extension agents' knowledge remains as up-to-date as possible (Swanson and Rajalahti 2010). The more fundamental underlying challenge in Nepal is to ensure that agricultural education at the tertiary level provides future extension officers with "core competencies" related to communication and project management rather than simply emphasizing theory-based learning (Suvedi and Ghimire 2015).

Coordination

In terms of coordination, the reforms offer a window of opportunity in at least two ways. Specifically, elected local bodies could facilitate greater collaboration among public, private, and civil society extension officers. Under the status quo, these various entities operate separately from each other and report to different authorities, thereby duplicating or undermining each other's activities. Moreover, civil society organizations such as the National Farmer Group Federation of Nepal hope that the reforms will result in more integrated service centers at the local level, whereby farmers can access a broad range of technical services and information, from soil testing to market information to irrigation options.³⁷ In fact, the ADS envisioned the creation of Community Based Agricultural Extension Service Centres at the VDC level, which would combine technicians for agriculture and livestock as well as include the AICC (Nepal, MoAD 2013). It is not yet clear whether this approach will be retained under the federal structure.

Coordination also needs to be enhanced between Nepal's extension agents and the agricultural research community. This will be even more difficult under the constitutional reforms since these responsibilities are assigned to different levels of government, and public employees will be hired under different institutional arrangements. The cases discussed later, particularly those of India and Indonesia, offer some options for improving research-extension linkages.

³⁷ Interview with NFGF, Kathmandu, January 12, 2016.

Food Safety Control in Nepal

Status of Food Safety Control in Nepal

Regulation of food safety in Nepal began in 1966 with the Food Act as the country was becoming increasingly open to international trade.³⁸ The Act has been amended at least twice in order to follow international standards and was being amended again at the time of writing. Other key statutory laws include the Plant Protection Act of 1972 and the Animal Health and Livestock Services Act of 1998. Nepal's membership in the World Trade Organization also means that it is bound to adhere to international standards such as Sanitary and Phyto-Sanitary Measures, recommendations of the Codex Alimentarius Commission, the International Plant Protection Convention, and the International Animal Health Organization (Bajagai 2012).

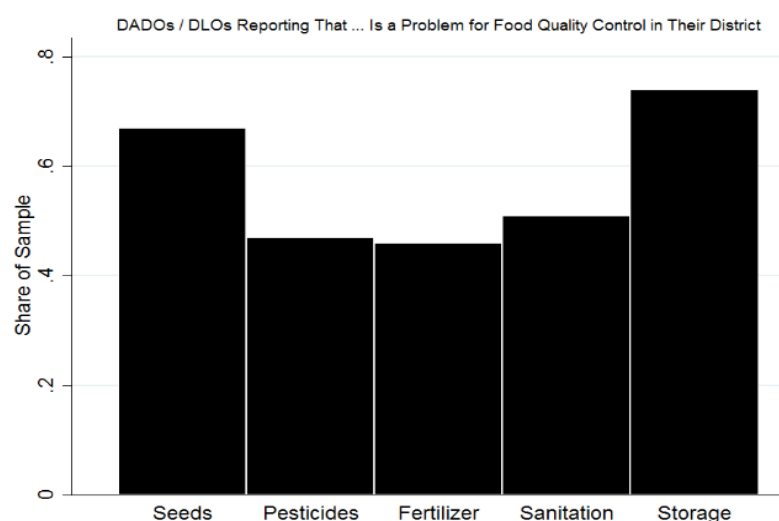
The Nepal Council of Standards and the Nepal Bureau of Standards and Metrology are the governing bodies for food-related standards. However, the implementation of the Food Act and oversight of food quality control and safety is under the jurisdiction of the MoAD, particularly the DFTQC. Structurally, DFTQC currently has five regional offices, four quarantine laboratories (three on the Nepal-India border and one on the Nepal-China border), 20 district food inspection units, and an apple-processing center.

One of the main challenges for DFTQC is insufficient human capacity and substandard infrastructure. Currently there are only 240 staff in the department, including only approximately 40 food inspectors.³⁹ Improving the quality of laboratory infrastructure is another major concern. Lack of capacity translates into significant challenges with food quality control at the local level. When asked what the most significant issues with food quality control in their district are, over 60 percent of DADOs/DLOs reported issues with seed quality, more than 70 percent reported lack of cold storage, and more than 40 percent additionally reported that pesticide usage, fertilizer usage, and poor sanitation are also significant issues for food quality control in their districts (Figure 3.14). More than 60 percent of DADOs/DLOs reported either that farmers in their district have no sources of information about food safety standards or that their only source is word of mouth. Perhaps more troubling, about one-third of DADOs/DLOs said they themselves have no sources of information about food safety standards at all or that their only source is the media or word of mouth.

³⁸ Today, Nepal imports approximately 60 percent of its food.

³⁹ Interview with DFTQC, Kathmandu, January 13, 2016.

Figure 3.14 Food quality control issues



Source: Authors' compilation from DADO/DLO Survey (2016).

Notes: DADOs = District Agricultural Development Officers; DLOs = District Livestock Officers. Question wording is: "What are the most significant issues in food quality control in your district? (Seed quality/Pesticide usage/Fertilizer usage/Poor sanitation/Lack of cold storage)."

Implications of Constitutional Reforms for Food Safety Control

Authority

The new Constitution specifies that "international trade, exchange, port, and quarantine" are exclusive federal powers (see Schedule 5). It also specifies that the "supply, distribution, price control, quality and monitoring of essential goods and services" will be a concurrent power of the federation and provinces (see Schedule 7). While not explicitly specified, it is clear that these functions, especially those boldfaced, are extremely relevant to food safety. At the local level, there are three functions relevant to food safety and quality: "basic health and sanitation"; "local market management, environment protection, and bio-diversity"; and "agriculture and animal husbandry, agro-products management, animal health, and cooperatives" (see Schedule 8). Overseeing products sold in local marketplaces, for instance, is more of a local function than monitoring imports from China and India.

In order to follow these functions, the DFTQC will need to retain a federal office where national food safety laws are formulated and national standards are established. However, an equivalent office will be created in each of the seven provinces where food safety laws will be implemented. The labs will also remain at the federal and province level, although at least two additional labs will be needed at the province level depending on how the new province boundaries are drawn. Staff at DFTQC also communicated that they are considering potential offices at the third tier of government for inspections and licenses, but at that level this would be a purely deconcentrated. The ultimate goal envisioned by DFTQC is the establishment of a Food Quality Control Regulatory Unit.⁴⁰

Coordination

It is equally important to find ways of reducing the current ad-hoc coordination across ministries and agencies with respect to food quality and regulation. A number of other ministries are relevant in this domain, including the Ministry of Home Affairs, Commerce, and Supplies; the Ministry of Industry; the Ministry of Education; the Central Bureau of Investigation; and the World Food Program. While there is

⁴⁰ Interview with DFTQC, Kathmandu, January 13, 2016.

currently a Food Standards Committee chaired by MoAD to improve regulatory coordination, the issue continues to be seen as problematic.⁴¹

There must also be greater attention to mechanisms for monitoring and tracing food items, not only across international borders but also now across provinces. Traceability systems should be considered that enable all authorities, from federal to local, to quickly obtain reliable information on the source of ingredients (Taylor and David 2009). In other federal countries, associations of food regulatory authorities from all provinces can ensure greater coordination. Alternatively, DFTQC could consider the creation of a special unit in its federal office tasked with managing and strengthening federal-state relations. Coordination will be especially important if DFTQC staff are recruited at the province rather than the federal level through the province PSC.⁴² In this scenario, such staff will need additional training to ensure their awareness of federal level laws, acts, and policies.

Incentives

In terms of incentives, there needs to be a major consideration of how to attract skilled individuals, including scientists, into food quality monitoring and public health. This is particularly important given that the DFTQC estimates that to restructure properly in the wake of the new Constitution, 1,500 staff will be needed (that is, more than six times the staff capacity than currently exists).⁴³ The financing arrangements for province offices and any additional labs will also need to be determined.

⁴¹ Interview with DFTQC, Kathmandu, January 13, 2016.

⁴² In the United States, for example, food safety regulatory authorities are embedded within either the state department of health or the state department of agriculture.

⁴³ Interview with DFTQC, Kathmandu, January 13, 2016.

4. NEPAL'S FEDERAL RESTRUCTURING IN COMPARATIVE PERSPECTIVE

Identifying options to guide MoAD's restructuring in the wake of the new Constitution can benefit from reviewing the experiences of other developing countries. As such, we have chosen to focus in greater depth on five countries, as shown in Figure 4.1. They were selected for a number of reasons. First, all are either federal or unitary but highly decentralized.⁴⁴ Consequently, the countries offer useful examples of possible organization within the agricultural sector across multiple tiers of government. Second, three of the countries (Kenya, Indonesia, and South Africa) have undergone institutional reforms relatively recently, offering some lessons for Nepal regarding opportunities and cautionary tales about managing the transition process. Third, the five countries selected include some that have found particularly innovative ways of improving implementation of agricultural policies and reconciling local priorities with national objectives. Nepal will be a somewhat unique federal country given the structure of its economy, particularly its heavy dependence on agriculture. In this regard, the Kenyan case will be especially instructive as that country undergoes its own devolution reforms.

Figure 4.1 Selected case study countries

Contribution of agriculture to GDP	Type of country	
	Federal (Year of legislation)	Unitary (Year of legislation)
High (>30% of GDP)	Nepal (2015)	Kenya (2010)
Low (<30% of GDP)	India (1950), Malaysia (1957), South Africa (1996)	Indonesia (1999)

Source: Compiled by the authors, based on World Development Indicators (WDI) (2015).

Notes: GDP = gross domestic product. Agriculture as a share of GDP is from the WDI.

Historical Overview of the Comparative Cases

The motivation for federalism or greater decentralization in the five comparison countries reflects different historical trajectories, and in turn has had implications for how these countries are administratively organized. The end of colonial rule (India, Malaysia), transitions to democracy (Indonesia, South Africa), and political violence (Kenya) were the three main motivations for the institutional configurations in these countries.

Federal States

Among the federal countries, Malaysia accords the least degree of authority and autonomy to its states. In fact, it has been labeled as “minimalist federalism,” wherein state-level governments have a limited ability to act independent of the central government. Malaysia represents an example of Stepan's (1999) “coming together” federalism, since it is a by-product of a historical legacy rather than a form of true power-sharing between states and the central government. Specifically, Malaysia is organized as a federation primarily because Malay states were each separately ruled by Malay sultans before colonialism, and the British reinforced the pre-existing divisions between states by recognizing and ruling each as a separate legal entity (Loh Kok Wah 2015). States boundaries do not correspond with Malaysia's ethnic groups; rather, these groups are distributed across state boundaries. Furthermore, Malaysia's federalism is not organized according to the “subsidiarity principle.” Malaysia is a relatively small

⁴⁴ Notably, the classification of country cases into state “types” is subject to interpretation since they often have features commensurate with both types. For instance, all the federal countries have been classified by “quasi-federal” by some scholars, while Kenya's structure is very similar to that of classic federal states.

country, with a population of only 30 million and a geographic size of about 331,000 square kilometers; subsidiarity is a relatively minor concern. According to the subsidiarity principle, areas like primary education and health care typically devolved to lower tiers of government remain with the central government in Malaysia.

As such, there is a limited degree of power-sharing between central- and state-level governments. While residual powers initially lay with states, they were reallocated to the central government in 1963 (Case 2009). Yet, the central government still relies on state-level governments to implement policies and deliver services, which gives states some de facto control over policy areas. According to the Ninth Schedule of the Federal Constitution, federal powers include security, law and order, foreign affairs, defense, justice, macroeconomic policies, health, education, labor, and social security. State powers are far fewer and include land, religious affairs, agricultural and forestry, water, and local public works. State powers are curtailed by a provision granting legislative powers to the federal parliament to ensure uniformity of laws across all states. In practice, this means that the federal government can overrule any regulations enacted by state legislatures (Loh Kok Wah 2015).

India accords more authority to its states than Malaysia but less so than other federal states. The framers of India's 1950 Constitution wanted to design a political system that could hold together a highly populous and diverse country, while empowering the state to shape economic development. As such, India's Constitution reserves a significant portion of governing authority for the central government. Further, the central government has a considerable degree of latitude to supervise and intervene in state affairs. According to Schedule 7 in the Indian Constitution, states officially have authority over police, public health and sanitation, local government, roads, agriculture, irrigation and water use, intrastate disease and pest control, land rights and usage, state public service commissions, all courts except the Supreme Court, and several specified taxes (India, MLJ 1950). States and the central government share power over economic and social planning, population control and family planning, labor, social security and social insurance, education, interstate spread of disease or pests, vital statistics, trade in agricultural commodities, and electricity. All residual powers lie with the central government, including the majority of revenue-raising authorities. Under this configuration, state governments are fiscally dependent on the central government as most revenue-raising authority lies with the central government, while many expenditure obligations lie with state governments.

In contrast to Malaysia and India, the adoption of federalism in South Africa in the mid-1990s was motivated by political transition and, specifically, by the end of apartheid in 1994. Between 1990 and 1994, the formerly ruling Afrikaner party, the National Party (NP), and the Zulu-dominated Inkatha Freedom Party (IFP) negotiated with the African National Congress (ANC) over the contours of decentralization in the wake of the transition to black majority rule.⁴⁵ While the ANC opposed federalism since it had negative connotations with apartheid-era black homeland policies and could precipitate ethno-nationalism, both the NP and the IFP insisted that federalism would offer a means of protecting minorities and providing necessary checks and balances (Robinson 2014).

By 1961, South Africa already had four autonomous provinces, and the apartheid government had institutionalized black "homelands." In 1994, racially demarcated local authorities were abolished. Then in 1996, a new Constitution was issued that provided the legal framework for decentralization. The Constitution promoted a system of "cooperative governance." Under this system, intergovernmental relations are governed by such standards as: (1) recognition of three spheres of government—national, provincial, and local; (2) acknowledgement of each sphere's constitutionally recognized powers, which are overseen by the Constitutional Court; and (3) assurance that the functions are distinct but interdependent (de Villiers and Sindane 2011). For this reason, South Africa is sometimes characterized as having an "hourglass federalism" structure in that the powers of local government are equivalent to those of national government, rather than inferior to state- and provincial-level governments. In this way, key public services are delivered with policy direction and support from the national level but also with oversight and guidance from state authorities (Boex 2012a).

⁴⁵ The Zulu community wanted to preserve the status of its kingdom in the current-day province of Kwa-Zulu Natal.

Schedules 4 and 5 of the 1996 Constitution outline the division of powers between the spheres of government. Most responsibilities—education, health, animal control and disease, agriculture, housing, trade, tourism, pollution control, and urban and rural development—are concurrently shared between the national and provincial governments. Provinces retain exclusive responsibility over more minor functions, such as ambulances, libraries and museums, provincial roads, provincial planning, and liquor licenses. The only two agriculture responsibilities that are exclusive to the provincial level are abattoirs and veterinary services (excluding regulation of the profession). Local government deals with streetlights, storm water, public transport and public works, childcare facilities, waste removal, and water and sanitation services, among others.⁴⁶

Unitary States

Like South Africa, democratic transition after the fall of the authoritarian Suharto regime in 1998 precipitated Indonesia's decentralization under the legal framework of Law No. 22 of 1999. Before then, most development activities were carried out by the central government through field offices in provinces and districts, and civil servants operating in the field offices of the national civil service. Previously, decentralization was understood as the responsibility of regions to support national development. Under the new law, decentralization was defined as "the rights of regions to make decisions over responsibilities falling within their jurisdictions" (Mokhsen 2003, 6). In promoting regional autonomy, the legislation focused primarily on expanding the role of district governments. The decision to concentrate power at the district rather than the provincial level was driven by the need to fulfill demands for greater local governance while limiting the risk of separatism.⁴⁷ Thus, provincial governments served as the central government's representatives in the region and played a coordinating role among districts, but had no supervisory authority over districts and little authority over policy making.

Under Law No. 22, districts received broad autonomy over most areas of policy making. While foreign policy, defense, security, religion, the legal system, and monetary and fiscal policy were explicitly assigned to the central government, residual powers remained with districts. Districts were explicitly assigned authority over public works, health, education and culture, agriculture, communications, industry and trade, investment, environment, and labor (Law No. 22, Article 11). Although residual powers conferred authority over these areas of policy making, these areas were specifically enumerated to ensure that responsibility for service delivery was devolved from provinces, where many functions had previously been housed, to districts (Mokhsen 2003). The legislation left unclear the role of the central government, if any, in shaping policy objectives such as minimum standards for education or health care.

Among the five cases (presented later in the discussion), Kenya's path to devolution, precipitated by a period of traumatic violence, most closely resembles the trajectory in Nepal. In particular, the disputed 2007 elections resulted in the deaths of more than 1,000 people. Much of that violence, and that which occurred during the 1992 and 1997 elections, was characterized by ethnic tensions. Therefore, devolution was intended to improve ethnic inclusion. The roots of the devolution effort actually went back to the country's independence in the 1960s. At this time, the Kenya African Democratic Union (KADU) lobbied for *majimboism*, or federalism, whereby six provinces would be established with equal status to protect minority ethnic groups from the dominance of larger communities (Anderson 2005). However, it was not until August 2010 that two-thirds of Kenyans voted in a referendum to adopt a new Constitution. The central feature of the Constitution was to transform Kenya into a quasi-federal country following the principles of a "cooperative form of devolved governance," which respects that distinctiveness but recognizes the interdependence of government relations (Simuyu 2015). This resulted in the creation of 47 county governments with elected governors and assemblies. As Aketch (2010, 20)

⁴⁶ See Schedules 4 and 5 of the 1996 Constitution. Many of the local government responsibilities are defined in more detail in the Municipal Structures Act of 1998, the Municipal Demarcations Act of 1998, the Municipal Systems Act of 2000, the Municipal Finance Management Act of 2003, and the Municipal Property Rating Act of 2004.

⁴⁷ It was thought that it would be more difficult for some 300-plus mayors to coordinate around separatism compared to only 28 provincial governors (Bennet 2010).

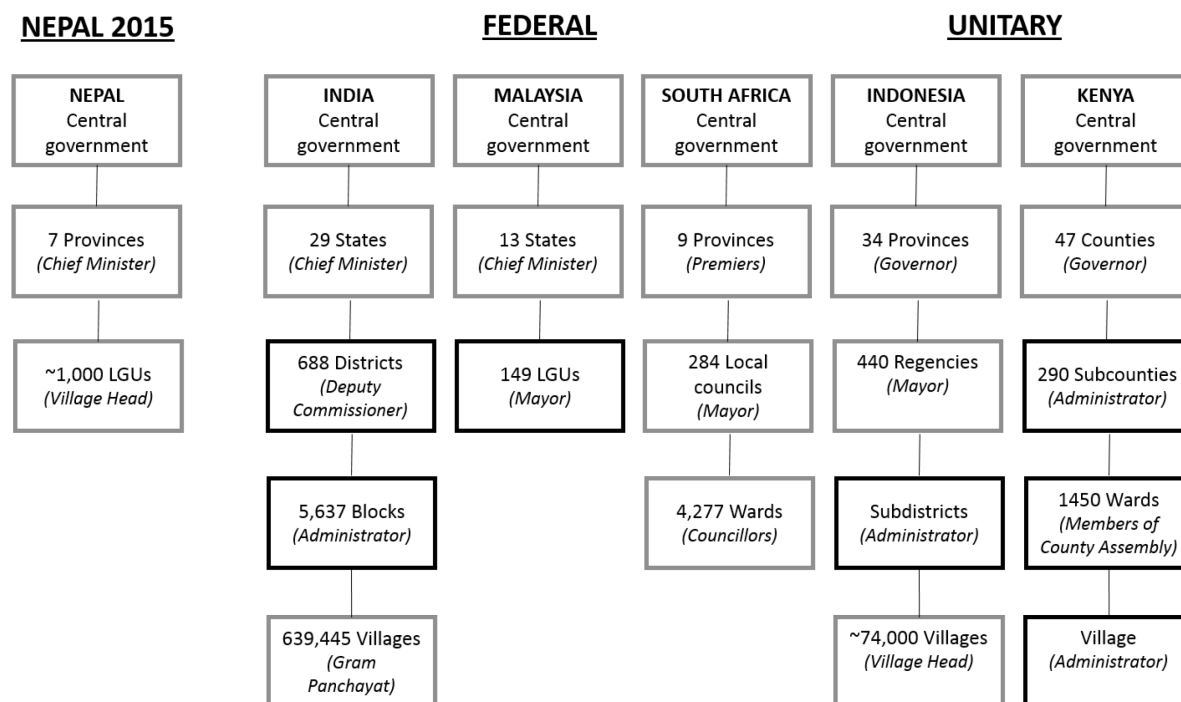
observed, “the new Constitution establishes national values and principles of governance that seek to diffuse, if not eliminate altogether, the ethnic tensions fueled by perceptions of marginalization and exclusion.”

Devolution was finally implemented in March 2013 after the first slate of governors was elected. The new political system also has an elected assembly and an executive committee at the county level. In addition, each county elects a representative to the newly created national upper house—the Senate—to ensure that they have a voice in national affairs. Despite the similarities to a federal system, the county governments can be suspended by the national government and cannot borrow funds without its consent. In this way, Kenya remains a unitary system in spirit, although it is sometimes characterized as “quasi-federal.”

Political, Fiscal, and Administrative Structure

Figure 4.2 provides a basic summary of how the subnational government is organized in each of the five countries. The three federal states (India, Malaysia, and South Africa) all have parliamentary governments. At the national level, India has two Houses, known as the *Rajya Sabha* and the *Lok Sabha*, that hold legislative power. There is also a Council of Ministers, headed by the prime minister, that is vested with executive power. Reflecting India’s vast population and geographic size, there are many tiers of subnational government within the country, including 29 states and 7 union territories. Each state has its own elected legislative body, which in turn selects a Chief Minister for each state; this person holds executive power at the state level. Within union territories, the executive is appointed by the President of India. Within each state, there are up to four additional layers of subnational government: (1) divisions, (2) districts, (3) blocks, and (4) villages/municipalities. India has a vibrant democratic system, with elections at all tiers of government.

Figure 4.2 Comparison of political structure across countries



Source: Authors’ compilation.

Notes: LGUs = Local Government Units.

Historically, states' limited ability to raise own revenues, combined with the federal government's extensive use of intergovernmental transfers tied to the pursuit of specific development initiatives, gave Indian states little fiscal space to pursue own-designed development initiatives. For example, when the federal government initiated the Agricultural Technology Management Agency (ATMA) reforms for extension, which are discussed in more detail later, it devolved the program to the state level but provided a specific grant to states that could be used only to implement the ATMA reforms. The fiscal dependence of states on the central government has eased its path for to pursue countrywide development strategies compared to a more heavily decentralized system. Nevertheless, it has also limited India's ability to derive the benefits of local experimentation and context-specific development initiatives that can be reaped under federal systems. However, in 2015, India began implementing a broad fiscal reform based on the recommendations of the Fourteenth Finance Commission. The central government devolved a 10-percentage point increase in tax revenues to states, increasing their fiscal ability to pursue their own, locally planned development initiatives. Of course, the risk is that states will choose not to spend the increased funds on well-designed development initiatives (CPR 2015).

There are both federal- and state-level civil services in India. Positions within the civil service are paid based on salary grade and tenure and historically have not been linked to performance. In 2012, the Sixth Pay Commission recommended introducing a Performance-Related Incentive Scheme to compensate federal civil servants above and beyond the base pay scale when they have executed their jobs well. The government of India accepted these recommendations, and line ministries have been instructed to develop compensation schemes for performance pay and to introduce them on a voluntary basis.

In Malaysia, there are two tiers of subnational government units that encompass 13 states and 149 local councils. State governments have state-level legislative assemblies that are elected directly, as well as appointed governors. Local councils are subordinate to state governments but responsible for several areas of service delivery. Elections of state legislatures provide the primary means of accountability of state governments to Malaysian citizens. Local governments, such as district or municipal councils, are not elected within Malaysia. Thus, accountability of local service providers to Malaysian citizens remains weak.

From a fiscal perspective, almost all revenue-generating authority is reserved for the central government, promoting a dependency of state governments on the central government for financial transfers. Regulatory authority is also conferred primarily on the central government. Even over areas like agriculture, that are technically under the purview of state governments, the national parliament can overrule any regulations implemented by state legislatures.

The concentration of fiscal and regulatory authority within the central government has led to severe fiscal imbalances within Malaysian states. The central government largely decides how the states can spend resources, and states must meet their constitutionally assigned functions to provide a minimum standard of public services. However, the federal government has failed to sufficiently finance the states' budgets to meet these requirements and to cede revenue-raising authorities to state governments. As a result, Malaysia's states have burgeoning deficits, and they have borrowed significantly in order to fill the financing gap (Abd Ghani 2014).⁴⁸

South Africa's 1996 Constitution reorganized the country from four provinces and "black homelands" into 9 provinces and 843 local authorities. In 2000, local government boundaries were revisited and the number of local authorities reduced from 843 to 284 (Materu 2008). Six of these 284 are characterized as metropolitan councils, with more than 500,000 people, and 231 local councils cover the rest of the country. In between, there are 46 district councils that amalgamate councils in rural areas and small towns to provide economies of scale for service delivery (Picard and Mogale 2014). The provinces have a right to enact their own constitutions (Malherbe 2008) and, according to the 1998 *White Paper on*

⁴⁸ Furthermore, Malaysia's ruling party has reduced intergovernmental fiscal transfers to states ruled by opposition parties as a means of inducing compliance with the central government (Loh Kok Wah 2015).

Local Government, local government is not viewed as subordinate to the provincial and national levels (Thornhill 2008).

In terms of accountability, the executive heads of the provinces are known as premiers and are indirectly elected for a five-year tenure by the provincial legislature, which in turn is directly elected by the population through a proportional representation system. Local government elections also occur in five-year cycles and councils are elected directly by citizens; the council in turn selects the executive leader, that is, the mayor. Ward committees were established after 1998 to enhance the participatory nature of local government (CLGF 2012).⁴⁹ Administratively, the provincial premiers appoint their own cabinets, known as Executive Councils, and the members thereof are referred to as Members of the Executive Council (MECs).

Fiscally, both provincial and local government is entitled to an equitable share of national revenue to support the provision of basic services assigned to it. In 2012, for instance, provincial governments received 32.5 percent of the equitable share; local government, 3.8 percent. The equitable share formula is aimed at allocating resources across local governments based primarily on the share of poor households in their jurisdiction (Cameron 2014). In addition, municipalities may receive grants from either the national or provincial government for conditional or unconditional purposes. They may also raise their own revenue through property taxes and charges for services. By contrast, the provinces require national legislation to impose taxes (Materu 2008). Notably, both provincial and local government in South Africa can secure credit, borrow, enter into contracts, and control financial management, subject to national legislation and regulation (Financial and Fiscal Commission, 2009). Each sphere of government has the right to determine its own budget but is in turn responsible for complying with it (CLGF 2012).

Kenya's new Constitution replaced the earlier system of local government, which had been made up of 8 provincial administrations; 172 elected local authorities distributed across municipalities (cities), town councils (small towns), and county councils (rural authorities); and 280 deconcentrated administrations.⁵⁰ These local authorities have since been aggregated into the new structure, with 47 counties. In this way, the reform is very similar to that being proposed in Nepal whereby the structure of local authorities and deconcentrated sectors had been operating at a more grassroots level than the newly created county governments (or the VDC governments in the Nepal case) (Boex and Kelly 2011, 3).

Fiscally, the national government now needs to transfer a minimum of 15 percent of national revenues to the new counties to account for their new functions. The distribution across counties is based on a formula designed by the Commission on Revenue Allocation and can be revised by the Senate every five years (Cheeseman, Lynch, and Willis 2016).⁵¹ Other transfers include an equalization fund for marginalized areas (World Bank 2012). In terms of own revenue generation, the Constitution assigns county governments autonomy over raising property rates, entertainment taxes, and some fees and charges (Boex and Kelly 2011).

Indonesia has four tiers of local government units: (1) provinces (*provinsi*), (2) districts (*kabupaten* and *kota*), (3) subdistricts, and (4) villages (*desa* and *kelurahan*). Since 2005, Indonesians directly elect the heads of provinces (governors) and districts (mayors). Rural villages (*desa*) also directly elect their leaders, while leaders of urban villages (*kelurahan*) are appointed. Provinces serve primarily as deconcentrated units of the federal government and do not have authority over districts. Decentralization is focused on districts, which hold all residual powers not explicitly reserved for the central government. Subdistricts and villages serve primarily as deconcentrated units of districts.

⁴⁹ All municipalities have to produce an Integrated Development Plan (IDP), which has a lifespan of five years and serves as a framework for assessing the need for infrastructure and services in the jurisdiction. IDP Representative Forums are aimed at encouraging the participation of communities within the process of designing the IDP.

⁵⁰ The deconcentrated administrations included health, agriculture, livestock, fisheries, planning, housing, lands, transport, rural electricity, sports and culture, plant and animal quarantine, and environment and conservation (World Bank 2012).

⁵¹ The current formula is as follows: 25 percent equal share, 45 percent based on population, 20 percent based on a poverty index, 8 percent based on land area, and 2 percent based on fiscal responsibilities (Cheeseman, Lynch, and Willis 2016).

In Indonesia, direct local elections provide the primary means of accountability between local service providers and citizens.⁵² Fiscally, lower tiers of government are funded primarily by transfers from the central government rather than from own-source revenues; thus, local government is to some extent incentivized to adhere to regulatory standards set by the national government (Pepinsky 2012). However, there are few incentives for improved efficiency, accountability, or performance embedded in Indonesia's intergovernmental transfer systems. The formula for intergovernmental transfers is based on a "fiscal gap" method, a complex formula assessing a region's ability to generate revenues and the projected gap between their ability to raise local revenues and fulfill basic services. In practice, this method of calculating transfers provides few incentives for local governments to meet service delivery goals (Shah, Qibthiyyah, and Dita 2012).

Administratively, civil servants in Indonesia's districts are employees of the districts. District governments thus have the authority to hire and fire local employees, ensuring a close relationship among the local public employees who provide services, local elected officials, and the citizens who can sanction local elected officials by voting them out of office. However, intergovernmental transfers by the central government to districts are designed to cover the salaries of local civil servants employed by district governments. This has created an incentive for district governments to become centers of employment, since employing more people enables them to receive more resources from the central government. This curbs incentives for efficiency in service delivery.

Agricultural Structure and Policy Planning

Contribution of Agriculture to Economy and Development Policy

Agriculture tends to be an important sector for decentralization in all five countries, which in turn span a wide variety of agricultural production and rural livelihood profiles. As seen in Table 4.1, Kenya is very similar to Nepal in the contribution of agriculture to the economy, the share of the population employed in the sector, and the relatively low productivity reflected in the level of value-added per worker. Improving agricultural productivity remains one of the key pillars of Kenya's Vision 2030 development strategy (Laibuni et al. 2015) and Agricultural Sector Development Strategy (ASDS) 2010–2020. However, agriculture was one of the main sectors that were devolved as a result of the new Constitution and, similar to Nepal with the ADS, the ASDS needs to be reformulated accordingly.

Malaysia and South Africa lie in stark contrast to Kenya. Both are relatively industrialized economies with a sizeable commercial agricultural sector, which is reflected in the low shares employed in agriculture and the sector's contribution to GDP but high productivity. Nevertheless, in recent years the government of Malaysia has increasingly emphasized the growth of agriculture, which has been selected as the "third engine of economic growth" in Malaysia's Ninth Development Plan. The plan directs particular attention to large-scale commercial farming and agro-businesses. Similarly, South Africa has adopted an Agricultural Policy Action Plan (APAP), 2015–2019, which aims to reverse low public funding to the sector and address barriers faced by international trade markets. The APAP recognizes that despite the dualistic structure of the agricultural economy, the number of smallholder households is increasing (also Aliber and Hall 2012).

⁵² Indonesia has also implemented a national Public Participation and Information System (known as "Lapor"), which enables citizens to send text messages to report and comment on any issue relating to service delivery—whether on teacher absenteeism, local infrastructure projects, or accusations of corruption among local officials (Scharff 2013). Complaints that can be validated are posted to a public website, so that the public can view them and the government's response to the complaint can be publicly tracked. A mechanism was initiated on the website by which citizens can vote on complaints that they believe should be personally viewed and attended to by President Jokowi—or whoever is in office—who then personally reads those complaints and comments with the most "votes" (Yusuf 2015).

India and Indonesia occupy interim positions in terms of the importance of agriculture to the economy and employment, as well as productivity levels. Indonesia's current low levels of government spending on agriculture coincide with the decentralization of authority over agricultural policy in the late 1990s. Prior to decentralization, government spending on agriculture represented around 6 percent of total spending but fell to 1 percent immediately after decentralization. By 2007, government spending on agriculture had recovered to nearly 3 percent of total spending and about 75 percent of pre-decentralization levels (see the SPEED database cited in Table 4.1).

Table 4.1 Overview of agricultural sector across countries

Key features	Nepal	Kenya	India	Indonesia	Malaysia	South Africa
Share of agriculture in GDP (%) ^a	33.7	30.3	17.8	13.4	8.9	2.5
Share of rural population (%) ^a	81.8	74.8	67.6	47	26	35.7
Share of population employed in agriculture (%) ^a	66.5	61 ^b	49.7	34.3	12.2	4.6
Spending on agriculture as a share of total government spending (%) ^c	9	6.1	6.5	2.6	8.4	0.6
Spending on agriculture as a share of agricultural GDP (%) ^c	5.1	6.2	6.2	3.6	20.7	8.0
Agricultural value-added per worker (constant 2005 USD)	270	395	716	1,079	10,124	7,238

Source: SPEED database (IFPRI 2015); WDI (2015); Laibuni et al. (2015).

Notes: ^a = World Development Indicators, unless otherwise noted, are for years 2013 or 2014; ^b = Data is from Laibuni et al. 2015; ^c = IFPRI's Statistics of Public Expenditure for Economic Development (SPEED) data. Dates are usually for 2011 or 2012 except for Indonesia, for which 2007 was the most recent year available.

Distribution of Powers for Agriculture across Ministries and Tiers of Government

Agriculture in most countries involves interministerial cooperation and coordination. As in Nepal, functions in the agricultural sector across these five countries are usually carried out by a Ministry of Agriculture (MoA). Activities within the sector, however, typically span approximately four to six different ministries (Table 4.2). The main difference in the case of Nepal is that in all five comparison countries, functional activities for agriculture and livestock are consolidated in the same ministry.

Table 4.2 Distribution of responsibilities in agricultural sector across ministries, 2016

Key features	India	Indonesia	Kenya	Malaysia	South Africa
<i>Crops</i>	Agriculture and Farmers' Welfare	Agriculture	Agriculture, Livestock, & Fisheries	Agriculture & Agro-Based Industry	Agriculture, Forestry, & Fisheries
			Industrialization & Enterprise Development	Plantation Industries & Commodities	Rural Development & Land Reform
<i>Fisheries & Aquaculture</i>	Agriculture and Farmers' Welfare	Maritime Affairs & Fisheries	Agriculture, Livestock, & Fisheries	Agriculture & Agro-Based Industry	Agriculture, Forestry, & Fisheries
<i>Livestock</i>	Agriculture and Farmers' Welfare	Agriculture	Agriculture, Livestock, & Fisheries	Agriculture & Agro-Based Industry	Agriculture, Forestry, & Fisheries
<i>Forestry</i>	Environment, Forests, & Climate Change	Environment & Forestry	Environment, Natural Resources, & Regional Development Authorities	Natural Resources and Environment	Agriculture, Forestry, & Fisheries
<i>Food Safety</i>	Health and Family Welfare	Agriculture	Health	Health	Health
					Agriculture, Forestry, & Fisheries
<i>Irrigation</i>	Agriculture and Farmers' Welfare	Public Works	Agriculture, Livestock, & Fisheries	Agriculture & Agro-Based Industry	Water & Sanitation
<i>Rural infrastructure</i>	Rural Development	Public Works	Transport & Infrastructure	Works	Transport
<i>Land use, tenure, and reform</i>	Rural Development	Environment & Forestry	Land, housing, & urban development	Rural & regional development	Rural development & land reform
Total primary ministries in sector	4	4	6	6	5

Source: Authors' compilation.

As in Nepal's new Constitution, these countries stipulate a distribution of powers over agriculture between the national and subnational tiers (Table 4.3). However, given their institutional structures and the degree to which they are truly devolved, the structure of their ministries of agriculture at the national and subnational levels varies significantly. For example, in India, South Africa, and Kenya, there is more autonomy at the second tier (state, province, and county, respectively) to organize their departments of agriculture according to local needs. By contrast, in Malaysia, the state departments of agriculture are relatively uniform, outside the autonomous states of Sabah and Sarawak. Indonesia has bypassed giving authority for agriculture to its second tier, that is, the provinces, with a preference for implementation at the district level. One of the benefits of devolving authority to a subnational government is that the local body can allocate resources to sectors and issues that they see as the highest priority for the geographic area. Therefore, it is important to allow the state or province flexibility in organizing themselves and not force each to maintain exactly the same technical expertise and service offerings.

Table 4.3 Vertical distribution of agricultural functions across tiers of government

Responsibilities	Federal countries			Unitary countries	
	India	Malaysia	South Africa	Kenya	Indonesia
Regulatory services					
- <i>Food Safety</i>	Federal	Federal	Federal, Province, Local	National	National
- <i>Plant Quarantine</i>	State	Federal	Federal	National, County	National
- <i>Livestock Quarantine</i>	State	Federal, State	Federal	National, County	National
Research and development	Federal, State	Federal, State	Federal, Province	National	National
Agricultural education	Federal, State	Federal, State	Federal, Province	National	National
Agricultural and livestock extension services	State	Federal, State	Federal, Province, Local	County	District
Environmental protection and conservation					
- <i>Soil Health</i>	State	State	Federal	County	District
- <i>Forests</i>	State	State	Federal	County	District
- <i>Water Use</i>	State	State	Federal	County	District
Land use, land tenure, Land reform	State	Federal	Federal	County	District
Irrigation	State	Federal, State	Federal	National	District
Rural infrastructure	State	State	Federal, Province	County	District

Source: Authors' compilation.

Coordinating Mechanisms and Performance Incentives

The preceding section elaborated on the number of ministries and tiers of government that need to be coordinated to make agricultural-sector policy effective under a federal or highly decentralized system. This will likewise be a critical priority in Nepal, especially in light of the ADS and other development strategies that will now need provincial and local government ownership and resources for effective implementation. Consequently, this section assesses the benefits and advantages of two key coordination mechanisms used in some of the comparison countries.

Service Delivery Units

Service delivery units constitute the first main mechanism and are increasingly popular in a number of countries. Typically, these units aim to translate agreed-upon goals into measurable targets. They involve drawing up performance contracts with senior government officials to assign responsibility for meeting those targets. Since senior officials are held to account, it is assumed that they will in turn be offered incentives to hold their own subordinates accountable. In this model, authority of senior echelons of government is used as a tool to ensure delivery, and disciplining civil servants who fail to comply is a key component of accountability.

Malaysia, Indonesia, and South Africa have all pursued this model to different degrees. In Malaysia, this unit was launched by Prime Minister Najib Tun Razak in 2009 under the name Performance Management and Delivery Unit, or Pemandu, and established as a public agency within the prime minister's office. Its mandate was to implement the Government Transformation Program, which sought to "monitor and improve government performance by focusing ministries on clear targets and initiatives" (Iyer 2011, 2).

The main innovation of Pemandu is that performance targets, rather than just the public servants charged with pursuing them, are constantly subject to review and revision. Instead of viewing civil servants as a cause of poor policy implementation, Pemandu's model treats them "as [a] potential source of invaluable information about how government does its work" and as the best forums "for organizing change that is both transformative and organic" (Sabel and Jordan 2015, 9). Thus, civil servants from across all government ministries are regularly brought together in "lab" sessions to brainstorm solutions and to identify and review targets. Ministries send their best and brightest employees to the lab sessions to discuss and debate national results areas. Within each results area, lab members divide the area into subcategories and then create performance indicators as they plan initiatives to achieve the target. The government also sets aside days for open lab sessions, which citizens are urged to attend. Results areas and indicators are presented to the public in town hall-style meetings and citizens are encouraged to give feedback (Iyer 2011). At the end of the lab sessions, participants and ministry representatives sign cooperative agreements committing to initiatives and action steps. However, after the outcomes and performance indicators have been agreed upon, they are subject to constant review and revision (Sabel and Jordan 2015).

Pemandu has been the main locus through which to improve coordination across ministries and across tiers of government within Malaysia. Pemandu established subunits for each of the key results areas identified, as well as one unit to cover all results areas. Further, Pemandu created delivery management offices within each line ministry; these offices communicate daily with the subunits. For results areas that involve decentralized policy implementation, delivery management offices were also set up at the state level. Employees from the subunits, from the main Pemandu office, and from the delivery management offices within each ministry meet weekly to discuss implementation challenges and to brainstorm solutions. The prime minister chairs monthly meetings (Iyer 2011).

The former Indonesian president, Susilo Bambang Yudhoyono, attempted a similar approach in 2009 by establishing the President's Delivery Unit for Development Monitoring and Oversight, known in Indonesia as UKP4. The initiative was designed with two goals in mind. First, it sought to help the president overcome the challenges of presiding over a coalition government, within which he had to convince ministers from competing political parties to coalesce around his plans for Indonesia's development. Second, it worked toward developing a comprehensive monitoring system that could help the president track the status of priority development initiatives. Prior to UKP4, Indonesia had three ministerial positions that were explicitly in charge of coordination across ministries. However, these coordinating ministers were equal in position to line ministers, meaning that in practice line ministers' cooperation with coordinating ministers was voluntary (Scharff 2013).

UKP4 was created to address these challenges by setting clear targets, monitoring progress at frequent intervals, and helping line ministries overcome any coordination challenges or bottlenecks that arose in real time. The staff of UKP4 received a higher salary than civil servants of equivalent pay grades, but could not receive income from any other sources. In addition, the initiative created a structure for monitoring key development targets on a quarterly basis, which was intended to be an appropriate interval for catching problems and bottlenecks as they arose but not be too burdensome for the line ministries. Key development targets were tracked as series of "action steps," with a clear delineation of the line ministry in charge of each action step and the other line ministries they would need to involve to achieve the step. Intermediate and final deadlines for each stage of the project were established. Each action step had only one line ministry in charge to enhance accountability for delivery; however, every line ministry needed to achieve the objective was also listed in order to increase pressure for coordination and cooperation across ministries (Scharff 2013).

UKP4 was initially successful, but little attention was given to the sustainability and institutionalization of the model. On the one hand, it provided a forum for the president and ministers to discuss and debate policy priorities, and to establish clear responsibilities across line ministries for achieving policy priorities. These responsibilities had the added benefit of letting line ministries claim public credit when they achieved their objectives, and it also provided a means for the president to gain up-to-date information on policy achievements and bottlenecks. On the other hand, line ministers who

failed to deliver on action steps were not sanctioned, which diminished incentives for coordination (Scharff 2013). When President Jokowi took office in 2014, he discontinued UKP4 and reverted to the old method of using coordinating ministers to work across line ministries.

Since 2010, the president and cabinet ministers have signed Delivery Agreements to release upon determination of key performance outcomes. The most recent outcomes are specified in the National Development Plan and the Medium Term Expenditure Framework of 2014–2019. Ministers, in turn, establish an Implementation Forum that incorporates all key stakeholders, including the provincial sector departments, relevant to achieving the key performance outcomes established in the Delivery Agreement. Each Delivery Agreement articulates a number of inputs, activities, and outputs necessary to achieve the designated outcomes. For example, of the government's 14 development outcomes, one consists of achieving "vibrant, equitable, and sustainable rural communities and food security for all." Since this is a cross-cutting outcome, the Implementation Forum is cochaired by the Department of Agriculture, Forestry, and Fisheries (DAFF) and the Department of Rural Development and Land Reform. DAFF also becomes the lead ministry responsible for attaining one of the five outputs, namely "improved access to affordable and diverse food," which is necessary to reach the outcome (RSA 2010, 2014). Progress regarding the meeting of targets is disaggregated by ministry and province and made publicly available through an online portal.⁵³

Intersectoral and Intergovernmental Coordinating Bodies

Intersectoral and intergovernmental coordinating bodies constitute the second main mechanism used in some of these comparison countries, with greater perceived effectiveness in South Africa than in Kenya. One of the strengths of the South African system is its attention to both vertical and horizontal coordination mechanisms, many of which were created following the Intergovernmental Relations Act in 2005. These include the President's Coordinating Council, which includes the president, deputy president, key national-level ministers, premiers of the nine provinces, and representatives of the South African Local Governance Association (SALGA).⁵⁴ The aim is to ensure that national policies and legislation are implemented, and that national, provincial, and local development strategies are well aligned and complementary. In addition, there is a National Intergovernmental Forum, known as "MinMECs," whereby national ministers meet with the Members of the Executive Council (MECs) of the provinces and SALGA. MinMECs are critical for ensuring coherence within sectors across all levels. Horizontally, there are also Premiers' Forums that focus on cooperation specifically across the provinces, while the District Intergovernmental Forums and Inter-municipality Forums do the same at the local levels (Dickovick 2005; Materu 2008).⁵⁵

In Kenya, a number of institutional bodies were created to oversee intergovernmental relations in the wake of the new Constitution. These include the National and County Government Coordinating Summit, which involves the president of Kenya, deputy president, and the 47 governors of all the counties. In addition, there is a Council of County Governors, comprised of all the governors, that operates as a forum of consultation and cooperation on matters of common interest across counties. The Intergovernmental Relations Technical Committee consists of nonelected officials that can convene a sectoral working group on matters relevant to both the county and national governments. The Intergovernmental Relations Secretariat, with a secretary appointed by the Technical Committee, is responsible for implementing decisions of the other three institutional bodies (Simuyu 2015). To help with the implementation of the ASDS, a County Coordination Unit also was established in all 47 counties (Chipeta et al. 2015).

⁵³ See Programme of Action, <http://www.poa.gov.za/Pages/default.aspx>.

⁵⁴ SALGA is the main organization representing local government and an employers' organization for municipal workers, with a presence in all nine provinces.

⁵⁵ See <http://www.etu.org.za/toolbox/docs/govern/inter.html> for more details.

At the same time, after the Constitution was passed, a number of legislative and administrative reforms were introduced to guide national and county governments in discharging their devolved functions in agriculture. The Agriculture, Fisheries and Food Authority (AFFA) Act of 2013 and the Crops Act of 2013 were enacted as blueprints for devolved governance of the sector. The AFFA ACT also established the Agriculture, Fisheries and Food Authority, a national state corporation, to act in consultation with the county government in carrying out its agricultural functions and to assist with coordination. The Authority comprises representatives from the ministries of finance, agriculture, and lands, as well as elected farmers from Kenya's major crop subsectors (Simiyu 2015). However, the Crops Act also endows the AFFA with additional functions related to the crops subsector, many of which overlap with those that were devolved to the counties.

For example, the Crops Act has the mandate to promote best practices in agriculture; maintain a database on agricultural products; and control the production, processing, marketing, grading, storage, collection, transportation, and warehousing of agricultural products (AFFA Act 2013 s 4 [b], [c], and [d]). Additionally, it is responsible for monitoring agriculture and determining research priorities in the sector. Consequently, the Crops Act duplicates many of the roles and functions delegated to county governments, generating confusion and potential conflicts between the national and county governments regarding decision making within the sector (Simiyu 2015).

Thus, the two approaches discussed here, service delivery units and coordinating forums, can each be useful for ensuring adherence and complementarity in goals across ministries and levels of government. Both options require a high level of political commitment and visibility to be effective. Service delivery units, however, can be vulnerable to the tenure of particular politicians and therefore need to be institutionalized within the bureaucracy. The example of Kenya also demonstrates that coordinating units cannot be endowed with the same authority as the constituent units they are trying to bring together. The South African example further demonstrates that both approaches can be used simultaneously.

Agricultural Research

As seen previously in Table 4.3, the national level is authorized to conduct agricultural research in unitary countries; in federal countries, this is usually a concurrent function of the national government and the second-tier entity (that is, the state or province). A number of common challenges need to be addressed to improve agricultural research in general and under a federal system in particular. These include improving funding resources and capacity, strengthening research on extension linkages, as well as enhancing policy coordination and research autonomy. This section examines how the five comparison countries have addressed these issues, and the challenges they have encountered.

India has one of the largest public agricultural research systems in the world, with high levels of public investment. In 2014, India spent around 1.4 billion in 2011 PPP prices, a 74 percent increase compared to 2000 (Pal, Rahija, and Beintema 2012; Stads 2015b). As seen in Table 4.4, the agricultural research system is coordinated at the federal level by the Indian Council for Agricultural Research (ICAR). This council has been credited with bringing about India's Green Revolution. ICAR plans and coordinates research among 97 agencies, including 4 universities, 45 institutions, 17 national research centers, 25 project directorates, and 6 national bureaus. The ICAR system accounts for about half of India's total agricultural R&D spending (Pal, Rahija, and Beintema 2012). The Indian Agricultural Research Institute is by far the largest in the system, followed by the Indian Veterinary Research Institute. Each of these, along with two other research institutes, also has status as universities. In general, the institutes focus on agricultural research, while the project directorates play a coordinating role between the institutes and the state agricultural universities.

At the state level, state agricultural universities are responsible for agricultural research and education specific to state needs, similar to the system in the United States. However, the overall number of researchers and research capacity at state agricultural universities has fallen in recent years, driven primarily by declines in funding (Pal, Rahija, and Beintema 2012). Because states have struggled to

sufficiently fund agricultural research, ICAR also operates networks of KVK, who test and demonstrate technologies in the field. They function as frontline research employees who operate at the district level.

Research between the federal and state levels is linked through All India Coordinated Research Projects, which are also managed through ICAR. These research initiatives have been successful in ensuring that resources are directed toward important commodities, and that research is coordinated among India's many different agencies and tiers of government. Recruitment and selection of all technical employees at the federal level is handled through an autonomous body—the Agricultural Science Recruitment Board—and prospective technicians have to take exams in different areas of specialization within the agricultural sector. Although the recruitment board is accountable to the president of the ICAR system, it is an independent recruitment agency. The recruitment board also handles examinations for prospective research professors at state agricultural universities.

Table 4.4 Comparison of agricultural research council organizations

Key features	India	Indonesia	Kenya	Malaysia	South Africa
Apex Council	Indian Council of Agricultural Research (ICAR)	Indonesian Agency for Agricultural Research and Development (IAARD)	Kenya Agricultural and Livestock Research Organization (KALRO)	Malaysian Agricultural Research and Development Institute (MARDI)	Agricultural Research Council (ARC)
Number of institutes and research centers overseen by council	101	9	18	29	11
National Ministry with oversight	Ministry of Agriculture & Farmers' Welfare	Ministry of Agriculture	Ministry of Agriculture, Livestock, and Fisheries	Ministry of Agriculture and Agro-Based Industry	Department of Agriculture, Forestry, and Fisheries (DAFF)
Chair of Council/Board	Minister of Agriculture serves as the president of ICAR	Appointed by president of Indonesia, reports to Minister of Agriculture	Competitively recruited, minimum qualification of master's degree, appointed by the president for 4 years, renewable for one additional term	Overseen by a Board of Governors and an independent Scientific Council, overseen by the Minister of Agriculture and Agro-Based Industry	University professor, appointed by DAFF MEC for 3-year term
Share of government funding for Council (most recent year)	Funded almost entirely by federal government*	Approximately 90%	57.5%**	Funded almost entirely by federal government	66%

Source: Compiled by authors.

Notes: * In 2008, it was estimated that 99 percent of funding was from the federal government and only 1 percent from own revenues (Pal, Rahija, and Beintema 2012). **This was the 2013–2014 estimate for the Kenyan Agricultural Research Institute (KARI) before it became part of the Kenya Agricultural and Livestock Research Organization (KALRO). DAFF = Department of Agriculture, Forestry and Fisheries; MEC = Members of the Executive Council.

Like India, South Africa's agricultural research mandate spans both the federal and provincial levels. Agricultural R&D agencies in South Africa are primarily funded by the government through parliamentary grants, supplemented by internal revenue generated from the sale of goods and services, support from producer organizations, and contributions from donors. The apex agricultural research institution is the Agricultural Research Council (ARC), which was established in 1992 as a parastatal

whose mandate is to support agricultural development through R&D, technology development, and technology transfer. This Council was to be responsible for all the agricultural research functions of the national government, including a mandate to serve farmers in the homelands under apartheid. Today, the ARC oversees 11 research institutes that focus on grain and industrial crops, horticulture, livestock, and natural resources and engineering (Flaherty, Leibenberg, and Kirsten 2010). Operationally, the Department of Agriculture, Forestry and Fisheries (DAFF) oversees ARC. The entire restructuring process in South Africa in the mid-1990s was difficult for ARC; between the mid-1990s and 2008, it resulted in the loss of more than 300 FTEs, many of whom migrated to the more competitive university sector (Flaherty, Leibenberg, and Kirsten 2010).

In 2007, 66 percent of ARC's funding was from a government source; 13 percent, the sale of goods and services; 5 percent, producer/commodity organizations; 1 percent, donor contributions; and 15 percent, other sources including interest received on investments and deferred income (Flaherty, Leibenberg, and Kirsten 2010). The increasing prominence of funding from private-sector enterprises and the use of research services distinguishes South Africa's national agricultural research system from those of other African countries (Liebenberg and Kirsten 2006).

Except for Gauteng Province, which outsources agricultural research to the ARC, all of the Provincial Departments of Agriculture (PDAs) undertake agricultural research within the specific provinces, focusing mostly on adaptive research. Adaptive research refers to the testing of newly introduced/imported technology to ensure registration and certification for use on the local market, as opposed to developing "own" innovations. Two key challenges are the lack of coordination in setting research priorities in agriculture, and competition for funding among the ARC, universities, and PDAs (Liebenberg and Kirsten 2006). Due to low funding and uneven research capacity, the ARC has been providing increased support to the provinces over the years. As of 2008, the PDAs accounted for 11 percent of national agricultural research capacity and 12 percent of national agricultural research investment (Flaherty, Leibenberg, and Kirsten 2010). Variation across provinces is high. The Western Cape, for example, has a strong capacity to pursue research, with 31 FTEs working in agricultural R&D within the PDA. By contrast, the province of Kwa-Zulu Natal has only 3 (Flaherty, Leibenberg, and Kirsten 2010).

Since the promulgation of the Public Finance and Management Act in 1999, all public entities—including the ARC—must report to Parliament on their service delivery, according to a defined set of performance indicators. The Department of Arts, Culture, Science and Technology harmonizes the reporting from various science councils and communicates the information to Parliament. A "balanced scorecard" technique, encompassing a set of 25 indicator areas, was identified in the areas of finance, stakeholder satisfaction, internal business organization, and internal learning and growth (Liebenberg and Kirsten 2006). This helps ensure that the ARC and other science entities show how inputs match outputs, which is a key component of accountability.

Despite also being a federal country, agricultural research in Malaysia is under the purview of the central government. The government devotes a fairly large amount of resources to agricultural research, spending \$87 million in 2011 USD on a PPP basis in 2014. This level of spending on agricultural R&D represents 0.84 percent of agricultural output, the highest spending intensity of any Asian country (Stads 2015b). The main agricultural research agency is the Malaysian Agricultural Research and Development Institute (MARDI), housed under the Ministry of Agriculture and Agro-Based Industry. It is governed by a board of directors that represents both public and private interests. MARDI oversees seven research centers that focus on horticulture, rice and industrial crops, food technology, livestock, strategic resources, biotechnology, and mechanization and automation. MARDI's research activities are undertaken by its 29 regional research stations, distributed according to agro-ecological zones rather than administrative boundaries (MARDI 2016; Stads, Tawang, and Beintema 2005).

In addition to MARDI, Malaysia's commodity-based research agencies play a significant role in agricultural research, representing almost half of the total spending on agricultural research in the country. Most prominently, the Malaysian Palm Oil Board, the Malaysian Cocoa Board, and the Malaysian Rubber Board all run their own research institutes. Both MARDI and the commodity-based research agencies

frequently partner with the private sector for specific research initiatives. Forestry and fishery research are separate components of the Malaysian agricultural R&D system, housed under the Forestry Research Institute Malaysia and the Fisheries Research Institute. Two of Malaysia's states, Sabah and Sarawak, have a greater degree of local autonomy than other states and therefore take a state-level lead on agricultural research through their departments of agriculture (Flaherty and Dardak 2013).

Despite being a unitary country, Kenya's devolution transformation has had important implications for the organizational structure of agricultural research. Specifically, the 2010 Constitution stipulated that agricultural research will be a function of the national government. Prior to this, 37 (6 government, 29 higher education, and 2 nonprofit) public agencies conducted agricultural R&D in Kenya. Together, the six governmental agencies accounted for about 70 percent of the country's agricultural R&D capacity in 2011. Most agencies planned and executed their research activities independently, which increased the risk of duplication, competition, and inefficient use of limited financial, human, and physical resources (Bientema et al. 2014).

In the aftermath of the Constitution, the government developed a National Agricultural Research System Policy in 2012 and enacted the Kenya Agricultural and Livestock Research Act in 2013. The Act reorganized the governmental research institutes in Kenya, including the Kenya Agricultural Research Institute (KARI), which was the main agriculture agency in Kenya, accounting for almost half the country's agricultural R&D capacity (Bientema et al. 2014). KARI later became the Food Crops Research Institute. The Act also created the Kenya Agricultural and Livestock Research Organization (KARLO), an umbrella research entity that became operational in 2014 (Bientema et al. 2014). KARLO's mandate includes: (1) coordinating the research of 18 institutes; (2) formulating policy and making policy recommendations to the cabinet secretary on agricultural research; (3) determining and advising the government on the resource requirements for agricultural research in Kenya at both the national and county levels; (4) formulating and approving the medium- and long-term research plans, strategies, and budgets of research institutes; and (5) promoting collaboration and partnerships between KARLO and international organizations.⁵⁶ The 2013 Act also established an Agriculture Research Fund, which is financed by bilateral and multilateral donors for the purpose of agricultural research (RoK 2013, 393–395). Research institutes are now semiautonomous in their operations, implementation of programs, and allocation and management of resources. A research advisory committee constituted by the board of KARLO will manage each research institute. The advisory committees' responsibilities include making recommendations to the Board on (1) strategic and policy issues related to agricultural research and research program infrastructure, and (2) strategic investment and collaborations with other research institutes and organizations (RoK 2013).

As in Kenya and Malaysia, agricultural research in Indonesia is under the exclusive purview of the central government. Indonesia devotes a fairly large amount of resources to such research, spending \$1.4 billion in 2011 USD on a PPP basis in 2014. This is more than double what it spent in 2000, illustrating Indonesia's renewed commitment to agricultural research and extension since 2006. These resources are spent relatively well. A fairly low share of resources goes to salaries and a fairly high share to research expenses and investments, compared to other Asian countries. Indonesia also has increased the technical capacity of its research staff; the number of those with PhDs has grown from 10 percent to 25 percent since 2000 (Stads 2015b). The agricultural research sector has contributed greatly to Indonesia's successes, namely, by helping the country to achieve self-sufficiency in rice production in 1984, and to develop a strong export-crop sector (Stads, Haryono, and Nurjayanti 2007).

The main research institute is the Indonesian Agency for Agricultural Research and Development (IAARD), housed under the MoA. The head of IAARD is appointed by the president and reports to the minister of agriculture. The IAARD oversees nine research centers that focus on socioeconomics, soils and agro-climates, agro-engineering, food crops, estate crops, horticulture, livestock, biotechnology, and postharvest activities. The Indonesian Research Institute for Estate Crops (IRIEC), the largest research institute in terms of resources, is linked to IAARD but is not formally a part of it. The IRIEC conducts

⁵⁶ The 18 research institutes are listed in the Second Schedule of the Kenya Agriculture & Livestock Research Act, 2013

research on plantation crops and oversees five research centers for different commodities. Forestry and fishery research are separate components of the Indonesian agricultural R&D system, housed under the Ministry of Forestry and the Ministry of Marine Affairs and Fisheries, respectively.

IAARD's institutes conduct studies and pass along their findings to the Assessment Institutes for Agricultural Technology (AIATs) in each province for testing. Having AIATs close to the areas they serve enables each to adapt technologies to fit the area they serve (Stads, Haryono, and Nurjayanti 2007). Further, concentrating AIATs at the provincial level, which is also responsible for training agricultural extension workers, ensures that agricultural research and agricultural extension are closely linked and integrated into a single structure. AIATs encourage participation in the planning of provincial agricultural research activities undertaken by extension workers, the private sector, farmers' groups, and other community organizations. The Indonesian Center for Agricultural Socio-Economic Research and Development, housed under the IAARD, is responsible for overseeing and coordinating among AIATs.

Agricultural Extension

In contrast to agricultural research, the provision of agricultural extension services is devolved to the local level in all the comparison cases, with policy and training often overseen at the national and second-tier level.⁵⁷ As in Nepal, all these countries face the challenge of ensuring greater linkages between research and extension. As shown in Table 4.5, the various approaches discussed here can be aligned according to whether they use institutional modalities to enforce this linkage or mandated requirements for individual extension agents.

Table 4.5 Summarizing efforts to enhance research-extension linkages

Institutional modalities		Mandated job requirements	
<i>India</i>	<i>Indonesia</i>	<i>Malaysia</i>	<i>South Africa</i>
Krishi Vigyan Kendras (KVKs) operate as front-line research employees at district level	Assessment Institutes for Agricultural Technology (AIATs) responsible for training agricultural extension workers	Research officers required to spend 30 percent of time on technology transfer activities	"Extension Science" has become professional field of practice, with agents required to stay updated on technological innovations to retain certification
Agricultural Technology Management Agency (ATMA) brings together researchers, extension agents and farmers to develop district-level extension plans			

Source: Compiled by authors.

More specifically, in India, the National Institute of Agricultural Extension Management within the Ministry of Agriculture & Farmer Welfare coordinates among state governments and among regional, national, and international institutes involved in agricultural extension management. Since agricultural extension services are managed at the state level, the services vary between states. For example, the State Agriculture Department in Assam focuses primarily on providing farmer training centers for tea cultivation, the primary commodity produced in the state. The State Agriculture Department in Andhra Pradesh emphasizes forming farmers' clubs within each village, and using these groups as the primary contact point for extension services and organizing activities like pest control campaigns (India, MoA 2011). State governments devolve responsibility for providing agriculture services to agricultural service centers to the district level.

⁵⁷ More broadly, agricultural extension is typically the main service that is decentralized wherever a country decides to pursue decentralization within the agricultural sector.

Despite the importance of agricultural extension services in India's Green Revolution of the 1960s and 1970s, state governments began struggling with funding the high staffing costs of the system in the early 1990s and stopped recruiting new staff (Babu et al. 2013). Decline in services is reflected in the low overall usage of public agricultural extension services in India: fewer than 6 percent of those employed in agriculture report having received information or training from public agricultural extension services (Glendenning, Babu, and Asenso-Okyere 2010). The high costs of reaching farmers in remote, rural areas, in addition to low commitment by state governments, have served as key barriers to improving the reach of extension services.

In recognition of these barriers, the national government implemented ATMA as the flagship initiative to revamp agricultural extension services in India. ATMA initially began as a World Bank-funded pilot project in 26 districts in 1998, and was eventually expanded to all districts in India in 2010. ATMA is registered at the district level; their primary purpose is to bring together extension workers, researchers, farmers, and other stakeholders to develop a demand-driven and context-specific district-level extension plan. At the block level, there is the Farm Information and Advisory Center (FIAC), which is responsible for developing and implementing Block Action Plans governing agricultural extension services within a given block. Every two villages within blocks have a "farmer friend," a relatively skilled local farmer who serves as the link between extension services within villages and blocks. Research centers are expected to interact directly with "farmer friends" and block-level agricultural structures.

At the state level, an interdepartmental working group aggregates the district-level extension plans to create a state-level extension plan. Then, a state-level agricultural management and extension training institute (SAMETI) provides training to extension workers around the state-level extension plan. In a comprehensive review of the ATMA reforms, Babu et al. (2013) found that FIACs provide a useful forum for gathering farmers' inputs into extension activities, but the majority of the extension activities in fact are still planned and executed at the district level. Furthermore, they found that states have not yet exercised much discretion in altering the design to fit local needs. While there are state-level differences in the effectiveness of ATMA implementation, states have not varied program design to fit local needs (for example, whether farmer groups would be more effective than "farmer friends" in some areas).

In essence, ATMA reforms are designed to foster the development of decentralized, locally planned extension services. Yet, the Indian agricultural extension system suffers from some of the costs of decentralization, namely, the difficulty of funding adequate services at the local level, without yet reaping the full benefits of pluralistic, demand-driven advisory services. Moreover, it remains difficult for citizens to hold local governments accountable for the provision of good quality, local agricultural extension services because the majority of public agricultural extension workers are employees of either state departments of agriculture or the federal ICAR system through KVKs. As such, local governments lack the authority to hire and fire agricultural sector employees and to make significant changes in how extension services are conducted. Consequently, weak incentives for frontline service providers, such as agricultural extension workers, are chronic in India.⁵⁸

A separate problem has plagued agricultural extension systems in Malaysia, namely, high levels of fragmentation across agencies and tiers of government. This is due to the system's commodity-based approach to advisory services, which provides specific services for oil palm, livestock, smallholders, and rubber, as well as the division of extension according to functional activities such as research and marketing. For instance, agricultural extension services exist under the Department of Agriculture, the Rubber Industry Smallholders Development Authority, the Federal Land Development Authority, the Federal Land Consolidation and Rehabilitation Authority, several regional development agencies, and the state-level departments of agriculture. Commodity-based agricultural extension services, such as those run through the Rubber Industry Smallholders Development Authority, are managed at the federal level and typically have state-level offices only in states where the relevant commodity is produced. State

⁵⁸ For example, Muralidharan et al. (2011) found that 40 percent of doctors and medical service providers are absent from public health centers on any given day in India.

departments of agriculture are responsible for boosting smallholder production more generally and also provide agricultural extension services. This system has the advantage of providing highly specialized services, but also results in duplication and wasted resources as multiple extension workers are required to provide services to clients who have both livestock and cash crops, for example (Karami and Ismail 2014).

Despite these coordination challenges, technology transfer is a major focus of extension services in Malaysia. For instance, extension research officers at the national level are required to devote 30 percent of their time to technology transfer activities (Qamar 2013a). Thus, there is a relatively close link between agricultural research and agricultural extension in Malaysia.

In South Africa, responsibility for extension services lies with the Food Security and Agrarian Reform division of DAFF, within the chief directorate of National Extension Support Services. This unit provides national extension policies, norms, and standards on the transfer of technology, as well as strategic leadership and guidance for the planning, coordination, and implementation of extension and advisory services through the nine PDAs (Worth 2012). Therefore, the central government's involvement in agricultural extension services is established through its role in human resource development. This encompasses: (1) forming a national agricultural extension policy, (2) preparing guidelines and norms on agricultural extension, and (3) establishing national standards and accreditations for agricultural extension institutions and services. Provincial governments facilitate the training of personnel in agricultural extension and cross-district information sharing. The districts retain the highest degree of authority over agricultural extension services, with the responsibility of planning and implementing these services (Zakaria 2003).

Extension is financed by the PDAs as well as by the district governments, but wealthier farmers are encouraged to pay directly for the service. The PDAs focus more on building the capacity of agents, empowering farmer organizations, and consolidating reports from municipalities. In contrast, the districts maintain a database for eligible clients for agricultural extension and advisory services, report to clients, and liaise with district authorities and stakeholders to enhance intersectoral efforts—for example, across agriculture, education, and health (RSA 2005).

The extension services are mandated to cover both subsistence and commercial farmers of all races. However, as of 2005, the ratio of extension workers agents to commercial farmers was 1:21, while the ratio to subsistence farmers was 1:857 (Qamar 2013b). Moreover, the public extension staff is distributed unevenly across the country in recognition of different PDA capacities and needs. The poorer provinces of Limpopo and Eastern Cape have more than 600 agents each, while there are only 25 in the wealthy Western Cape province. This may reflect the strong role of private-sector companies providing extension to commercial farmers (Qamar 2013b). By 2008, it was estimated that the extension service was understaffed by approximately 5,500 officers. According to Aliber and Hall (2014), a key problem is that PDAs inherited too many nonextension staff from the apartheid-era administration, and have not yet succeeded in reducing the number of “supernumeraries,” or staff in excess of requirements. As a result, the PDAs misallocate a large share of their budgets to the salaries of these supernumeraries, and therefore have much less to devote to extension. In total, the country has approximately 2,100 agricultural extension staff (Qamar 2013b).

In terms of incentives, the government has aimed to increase the attractiveness of extension work by making it an accredited profession. Since 2014, “Extension Science” has become a professional field of practice. This means that only those who become qualified in the field can actually provide extension services and apply to be a government extension worker. Registered agents must also follow a Code of Conduct and adhere to continuing education requirements to retain their qualifications (Bitzer 2016). South Africa does have a well-established association—the South African Society for Agricultural Extension—for extension workers across the public, private, and NGO sphere. This facilitates knowledge sharing and acts as an informal coordination mechanism.

The experiences of the two unitary cases, Kenya and Indonesia, in transitioning to a more decentralized extension system offer a cautionary tale for Nepal. In Indonesia, before decentralization the government introduced a unified agricultural service center model, which housed all extension workers in the district, to provide agricultural extension services at the district level. This was intended to better promote diversification and to serve farmers across a variety of crops and specializations (World Bank 2007). However, after decentralization was implemented, district governments had the authority to choose the structure for providing services as well as the level of resource devoted to them. About two-thirds of districts chose to close the unified service centers and to revert back to the more fragmented structure. Agricultural spending fell dramatically once districts had control over spending allocations. In the district of Cianjur in West Java, for example, agricultural spending fell by 88 percent after decentralization (World Bank 2007). This is a major concern for Nepal, given the low levels of support for local agricultural projects outlined in Section 3.2.

With Extension Law No. 16/2006, extension services were revitalized in 2006 as part of a larger commitment by the government of Susilo Bambang Yudhoyono to reinvigorate growth in the agricultural sector more broadly. The law supported a pluralistic approach to extension services, including both governmental and nongovernmental extension actors, and joined agricultural, fisheries, and forestry extension services within a single institution. The law outlined an agricultural extension program that would be “decentralized, participatory, transparent, self-initiated, equitable in partnership” and accountable (Article 3c). It also established norms and standards for agricultural extension institutions at all tiers of government and provided mechanisms for coordination among central, provincial, and district levels. Today, Indonesian extension services and their participatory approach are used as an example of the benefits of decentralizing extension services. However, these benefits only began to accrue after the central government reaffirmed its commitment to agricultural extension and to set extensive national standards, guidelines, and resources for implementing it.

Kenya’s agricultural extension services are still in flux in the wake of the devolution exercise. However, a key challenge has been with respect to personnel management. Before devolution, there were an estimated 4,000 agricultural, livestock, and fisheries extension workers at the district level. Counties, which are now in charge of extension, have yet to fully absorb these staff and some have instead chosen to recruit new staff. According to the World Bank (2014b), this has resulted in two parallel extension service systems, which has been a burden on budgets and operations and has resulted in a total disruption of services in some new counties.

Food Safety and Quality Control

While subnational governments can play a role in food safety and quality control, Table 4.3 illustrated that the national government must always be involved in this function to ensure policy formulation, coordination, and oversight. Moreover, as seen in Table 4.2, most of the comparison countries have assigned the Ministry of Health to play the primary role in this function or to pursue it in conjunction with the MoA. This is a key difference from Nepal, where MoAD appears to have primary responsibility for this function.

Before 2006, regulation of food safety in India was scattered across different ministries and across different tiers of government, resulting in a complex array of acts and regulations governing different food products. In 2006, the passage of the Food Safety and Standard Act repealed all prior food safety regulations and created a single reference point for food safety regulation. The Act created an independent authority, the Food Safety Standards Authority of India, under the federal government, with a mandate to: (1) create food safety regulations and standards, (2) establish guidelines for food safety accreditations and certifications, (3) provide scientific evidence in support of food safety regulations, (4) collect data on biological risks and contaminations through laboratory testing, (5) disseminate information about food safety, and (6) train people in food-related businesses in food safety issues (Food Safety and Standards Act of India 2006 [FSSAI 2006]). The federal-level Food Safety Authority of India has

regulatory and enforcement authority, while state-level Food Safety Authorities are responsible for implementation.

In addition, authority for plant quarantine and pest control is vested with the Ministry of Agriculture & Farmer's Welfare under the Department of Agriculture & Co-operation. The Plant Quarantine Service is responsible for both inspections and plant quarantine, and operates at both the federal level and through regional offices at the main border checkpoints, ports, and airports. Responsibility for livestock quarantine lies with the Department of Animal Husbandry, Dairying & Fisheries and is executed through regional quarantine facilities.

In Malaysia, regulatory authority lies primarily with the federal government under the schedule within the Constitution that reserves control over trade and health to the federal government. Quality control is undertaken by the Ministry of Health for food, the Department of Veterinary Services for meats, the Fishery Department for fish, and the Department of Agriculture for plants. The food quality regulations are implemented by deconcentrated units of the Ministry of Health in each state, who in turn further deconcentrate quality control implementation to local governments and to designated trading entry points. Food laboratories are run by the Ministry of Health in every state. Plant and animal quarantine services are run by the state Departments of Agriculture and Veterinary Services, respectively.

In South Africa, food control is a concurrent responsibility shared by the national, provincial, and municipal tiers of government. The Food Control Directorate in the National Department of Health administers food legislation on behalf of the Minister of Health, while the Food Safety and Quality Assurance Directorate in the Department of Agriculture Forestry and Fisheries regulates the safety of animals and animal and agricultural products, and promotes the safety of food of plant and animal origin. The South African Bureau of Standards is responsible for the control of canned meat/fish products and frozen marine products. DAFF's Food Safety and Quality Assurance Directorate chairs a national Food Safety Forum that publishes hazard profiles, food safety checklists, and compliance materials for different types of food operators. A Food Safety Forum Technical Working Group periodically updates the documents. With respect to meat safety, regulating abattoirs is an exclusive responsibility of the provincial government. The provincial departments of agriculture all have a subprogram that focuses on veterinary services and that oversees inspections at abattoirs, processing plants, and dairy establishments. The provinces may also provide health certification, where relevant, to the import or export of animals and animal products.

The concurrent delegation of other food safety responsibilities to be shared concurrently between the national and provincial governments has raised a number of challenges for coordination across different tiers of government. For instance, there is a lack of norms and standards across provinces regarding the frequency of inspections, insufficient staff at the local level to perform inspections, and a lack of clarity about how food products are brought into each province (RSA 2013).

As in India prior to 2006, Kenya is struggling with reconciling responsibilities for food safety and quality, which are currently scattered across 12 different ministries or departments. Primary responsibility lies with the Ministry of Health, the Kenya Bureau of Standards, and a parastatal known as the Department of Veterinary Services and the Kenya Plant Health Inspectorate Service. The county governments are charged with the following responsibilities: implementation of laws, regulations and food standards; inspection and licensing of food premises; maintenance of hygienic practices; management of food safety events; and surveillance of food-borne diseases or hazards. A National Food Safety Coordination Committee (NFSCC) was established in 2007 as an interministerial body, with its secretariat in the Ministry of Health, to increase awareness about the impact of food safety and quality, coordinate all food safety activities in the country, and initiate the revision and harmonization of all the relevant acts of Parliament. As of May 2015, a draft National Food Safety Policy was yet to be adopted into law, and the NFSCC has not yet received legal backing to address food safety issues (Ombacho 2015).

Indonesia appears to have the most streamlined regulatory authority over food quality control and plant and animal quarantine, which lies squarely under the purview of the central government under the MoA. Within the MoA, the Agency for Agricultural Quarantine oversees centers for animal and plant (seed and nonseed) quarantine and biosafety. The government operates plant quarantine stations in each province that are responsible for inspections, postentry quarantines, treatment, detention, rejection, and, when necessary, destruction. These stations also perform pest surveys and detections, and serve as coordinating points for cooperation with quarantine facilities in relevant trading-partner countries (Indonesia, MoA 2011).

5. POLICY RECOMMENDATIONS FOR AGRICULTURAL GOVERNANCE IN NEPAL

These other country perspectives are extremely relevant for Nepal's agricultural governance restructuring. They show that many of the challenges facing Nepal's agricultural sector, particularly with regard to devolving agricultural responsibilities, are neither unique nor unsurmountable. At the same time, the cases provide many lessons from other countries' transition experiences and institutional innovations.

Nepal's restructuring process should be perceived as a unique opportunity to address existing weaknesses in order to improve the enabling environment for agricultural policy planning and implementation. In addition, the restructuring process enhances service delivery for Nepali citizens, who depend on the agricultural sector for their livelihoods. More specifically, the comparison cases provide useful insights related to the five principles guiding this paper: authority, autonomy, accountability, incentives, and coordination. In many instances, the challenge will be identifying ways to minimize trade-offs among these principles without forfeiting the potential advantages of a more decentralized system under federalism.

Authority

As discussed earlier, several issues set by the Constitution will shape the administrative restructuring of the agricultural sector in Nepal. First, the Schedule of Powers in the Constitution establishes that certain tiers of government will gain authority over certain aspects of agricultural governance. Authority over agricultural extension services, management of local agricultural roads and irrigation projects, and livestock health services are explicitly reserved for local government units. Authority over provincial level irrigation projects and provincial agricultural and livestock development is reserved explicitly for provincial governments, and authority over quarantine and mega irrigation projects is reserved for the federal government. These specific provisions must shape the governance of the agricultural sector under the new federal system. However, a number of other issues remain unresolved, especially with regard to concurrent functions. Among these are agricultural research, food safety and quality control, and the general process of transitioning authority for functions to subtiers of government. Some relevant policy suggestions include the following:

- ***Ensure that the transfer of any authority to subnational units of government follows a sequenced approach, based on a clear road map, and offers the opportunity for refinements along the way***

Federalism and devolution more generally have obvious implications for intergovernmental fiscal relations. While this is a primary concern for MoFALD, MoAD should also keep this in mind to ensure a realistic transition of functional authority in the agricultural sector. Kenya's transition experience with devolution is instructive in this regard. Initially, it had been recommended to transfer only some activities first, across multiple sectors with a clear "road map," to ensure that newly created subnational governments were not overwhelmed and that service delivery would not be interrupted (World Bank 2012). Instead, political expediency resulted in transferring too much authority simultaneously, and the National Treasury was unable to transfer funding in a timely manner for county governments to implement agricultural programs as anticipated (World Bank 2014b). Since finance needs to follow function, neither provinces nor local government should be given functions that they cannot afford to carry out. Provinces and local governments may also begin with low and uneven human resource capacities, which also affect the ability to implement agricultural programs.

Moreover, one of the most important elements in Indonesia's shift from a highly centralized to a highly decentralized state was that it set up opportunities for mid-course corrections and reevaluations of the decentralization process down the line. A period of 10 years was designated as a "review period" for the decentralization laws, and the government remained flexible about making changes to address flaws in the original design. This time frame was selected to allow the government to retain flexibility to revise what did not work, while also allowing the new structure sufficient time to work before revising.

Consequently, when and where MoAD has latitude, it should advocate for a staged transition whereby functions at the subnational level are initially transferred very gradually, and it should resist the temptation to invert the balance in staff and responsibilities too quickly in order to show “progress” relating to reform. Taking this approach, however, requires clear public communication to assure newly elected subnational leaders that an incremental approach is for efficiency purposes rather than a means of undermining the authority of local governments.

- ***Develop standards for food quality control at the federal level under MoAD, while implementing quarantine and inspection functions at both the federal and provincial levels***

Given the variation in production patterns and trading levels with bordering countries in the provinces, the degree of prominence accorded to plant and livestock quarantine, as well as pest control, will vary as well. Consequently, the new provincial ministries of agriculture should include a quarantine and pest control department when relevant, with inspections overseen at both the federal and provincial levels. This is the model followed in India. As in Malaysia, standards for food safety and quarantine should be determined at the federal level and labs overseen by the federal government to ensure cohesion in testing, and to consolidate scarce human and financial resources. In the long term, Nepal’s plan to establish a Food Quality Control Authority may remove these federal functions from MoAD and transfer them to an autonomous body.

- ***Consider “centers of excellence” for agricultural research in each province rather than a research institute for every agro-ecological zone***

Research, science, and technology are concurrent functions of the federation and the provincial governments in the new Constitution. NARC’s current thinking on how to address this issue, which involves management of basic research and standards at the central level with verification experiments at the local level for region-specific crops, follows best practice suggestions (Byerlee and Traxler 2001). However, in implementing this approach, Nepal needs to avoid replicating more subnational institutions than can be adequately funded and capably staffed. A useful model is offered by Malaysia, a federal country with many diverse agro-ecological zones. Rather than establishing a research institute for every different agro-ecological zone in every different state—and risk overloading an already over-stretched agricultural research system—MARDI focuses only on targeting agro-ecological zones. Another federal country, the United States, has followed a similar approach due to financial constraints, and has established “centers of excellence” for each agro-ecological zone in different states. Thus, a single research institute could exist within the country for a particular agro-ecological zone, and each province would have only one provincial research institute.

Autonomy

A common challenge observed across the country cases is that federalism or devolution can result in subnational governments receiving functional authority without autonomy. Another is that their autonomy can produce results that have unintended consequences for development policy more broadly and agriculture in particular. These are also very serious concerns in the Nepali context. As such, key guiding principles include:

- ***Avoid imposing a uniform organizational structure on provincial departments of agriculture***

As per Nepal’s Constitution, provinces will be responsible for agricultural development in their respective boundaries. While certain functions, such as extension, research, and quarantine, will need to be addressed, provinces generally should have autonomy to structure Provincial Departments of Agriculture to suit local needs. In India, for example, State Departments of Agriculture do not replicate the structure of the Department of Agriculture at the federal level, which has 26 separate divisions. Likewise, in South Africa, PDAs are structured to reflect the particular agro-ecology and rural

development issues (for example, land reform) of the specific province while retaining a subunit focused on communication and coordination with the federal ministry.

- ***Stay vigilant concerning how reforms to fiscal finance in the wake of federalism may affect the prioritization of agriculture by local governments***

Providing subnational governments with greater autonomy over taxing and spending can lead to unintended consequences for the agricultural sector. In Kenya, devolution has resulted in a majority of rural counties introducing local cess charges that target agricultural activities, particularly coffee, tea, and livestock. Since these charges are not coordinated among counties, they have often resulted in traders paying more than once and raising transaction costs in agriculture and livestock farming that undermine the attractiveness of the sector, and hinder expansion into more high-value agribusiness opportunities (World Bank 2014b). A similar outcome occurred in the wake of Indonesia's decentralization, where local governments faced pressure to generate own-source revenues. The agricultural sector was particularly hard hit by the proliferation in local tax laws, with every district imposing its own set of levies and tariffs on agricultural goods passing through its borders (Sumarto, Suryahadi, and Arifianto 2004). These interregional tariffs and levies diminish incentives to produce agricultural surplus.

Another lesson learned from both the South African and Indonesian cases is that resources for agricultural extension can be constrained once local governments have greater control over local finances. For example, in South Africa, extension is financed by the PDAs and the districts but remains highly understaffed due to the retention of "supernumeraries" (that is, staff who are unnecessary but inherited from the apartheid-era system). In Indonesia, resources for agricultural extension dropped dramatically in the wake of decentralization (World Bank 2007). Commitment to agriculture did not begin to recover until 2006, when the national government reaffirmed a commitment to agricultural extension services by passing national legislation containing service delivery standards and by providing central government resources to fund these new standards.

These examples suggest that MoAD, in conjunction with MoFALD, will need to make a decision about whether to (1) retain earmarked funding for agriculture to ensure that agricultural services remain funded, or (2) allow local government sufficient fiscal autonomy to determine their own spending priorities, even if agriculture is not among them. As noted earlier, there is reason to believe that if spending earmarks for VDC and DDC block grants were lifted, local spending patterns would not match up with national priorities, particularly in the agricultural sector.

- ***Augment NARC's autonomy by making alterations to its governance structure, reconsidering federal requirements for recruitment and diversifying financial sources***

NARC should become an autonomous research body that operates primarily at the federal level. This will involve ending the process of having the MoAD minister chair the NARC executive council, which will reduce leadership turnover. Instead, NARC could follow the example of many of the other countries discussed here, whereby the head of the council is appointed by the minister of agriculture or the national executive for a defined and renewable term, and must meet a minimum level of qualifications. For example, in the South African case, the chair is often a university professor.

In terms of personnel, NARC should retain control over its own recruitment. While this is currently the case, the Constitution stipulates that any entity receiving more than 50 percent of government funding will need to recruit through the PSC. This will severely curtail NARC's ability to find high-quality specialists in agricultural and livestock science. Since dependence on government funding is one reason for this stipulation, diversification of funding sources is essential. One alternative is that the PSC establishes a specialized recruitment exam focused specifically on agricultural science, as in India.

These issues are all interrelated: leadership turnover is a major deterrent to private sector partnerships with Nepal's agricultural sector.⁵⁹ However, public-private partnerships have provided a key source of funding for agricultural research in other countries such as Malaysia and South Africa.

Accountability

Greater autonomy for provincial and local governments implies that there should also be greater vertical accountability between citizens and their local governments, for both good and bad performance. For instance, early indications from Kenya's reform suggest that devolution has notably strengthened vertical accountability due to the high level of autonomy accorded to county governors. Having a relatively small number of counties with relatively large populations ensures that the county governors and senators are quite powerful vis-à-vis the central government. However, they, along with members of Parliament, now have to compete quite fiercely against each other and alternative competitors to attract citizen votes, and are being held to account for service delivery promises made during election campaigns (Cheeseman, Lynch, and Willis 2016).⁶⁰ Yet, with a dispersion of autonomous actors responsible for agricultural policy and services, lines of accountability across different government entities can be easily muddled. To address these challenges, two key options include the following:

- ***Consider piloting service delivery units and performance contracts within MoAD to improve accountability***

Service delivery units and performance contracts have been successful in setting national-level development priorities, and in developing metrics by which to measure successful service delivery within the priority areas. By focusing on a few priority areas and clarifying metrics for success, service delivery units have helped ministries to identify and address bottlenecks in policy implementation. A key part of the success has been creating metrics for successful service delivery beyond merely "budget received" and "budget executed," and receiving frequent updates on these priority metrics so that bottlenecks can be addressed in real time. For each priority policy, a "responsible" ministry, department, or level of government can be identified that is held accountable for policy successes and failures. In both Malaysia and South Africa, this responsibility is formalized by means of a performance contract between ministers and the prime minister.

- ***Address the existing disconnect between accountability and authority for agricultural extension elaborated in the new Constitution***

While Nepal's Constitution stipulates that agricultural extension will be a responsibility of local government, extension workers will be recruited as civil servants under a provincial-level PSC. This reflects the current arrangement in India, in which a majority of extension workers are employees of state departments of agriculture or of the federal ICAR structure through the KVKs. As noted earlier, even if Indian voters tried to hold local governments accountable for poor-quality extension services, local governments lack the authority to hire and fire agricultural-sector employees or to make significant changes in how extension services are conducted. It is difficult to imagine that the same outcome would not occur in Nepal under the new constitutional provisions. Consequently, it would be useful to consider ex-ante a modality by which local governments will be able to convey extension agent performance to the provincial departments of agriculture in a meaningful way, resulting in either sanctions or rewards for the agent by the provincial government. At the same time, local governments could publicize their communications with provincial departments of agriculture on such matters so that citizens know where blame, or praise, should be bestowed.

⁵⁹ Interview with Agro-Enterprise Center, Federation of Nepalese Chambers of Commerce and Industry, January 12, 2016.

⁶⁰ For some caveats on corruption, see <http://www.oxfordbusinessgroup.com/news/kenya-devolution-still-evolving>.

Incentives

Any type of public-sector reform generates a large degree of uncertainty among civil servants, especially if little information on the process is communicated to them in advance. Implementing federalism can be especially unsettling. Despite the espoused goals of giving citizens a greater voice and bringing government closer to the people, civil servants may still enjoy greater benefits and the status associated with working with the federal administration compared with those working in provinces or remote local governments. In Nepal, the process may be even further complicated by the country's relatively strong civil service unions. This suggests the following considerations:

- ***Sequence the transfer of MoAD staff to prioritize local needs and existing civil servants before hiring additional staff to address remaining capacity constraints***

This prescription is derived from a number of cautionary tales of bloated civil services at the subnational level as a result of reforms. Notably, Indonesia transferred around 2.4 million civil servants from the center to local government units in the wake of its decentralization reforms (Bennet 2010). Central government civil servants working in regions were given the option to either remain there or to return to their home districts. Relatively few chose to move, accepting their change in status from central government to local government employees. However, because staffing was driven by concerns about managing civil service employees rather than local needs assessments, many districts were forced to maintain large cadres of civil servants who had been newly transferred from the central service to district governments, and provincial governments kept large numbers of staff despite their significantly reduced role in the new governance structure (Usman 2002). On the other hand, some districts, particularly in remote areas, did not have enough personnel under the new system to carry out their increased number of responsibilities (Bennet 2010).

As noted earlier, this dynamic has been especially problematic for agricultural extension in Kenya and South Africa. In Kenya, counties have not yet absorbed the more than 4,000 agricultural extension staff but have simultaneously recruited new staff. Likewise, in South Africa, the retention by provinces of supernumeraries from the apartheid era has meant that a disproportionate share of resources is spent on salaries rather than extension services.

For Nepal, this suggests that staff already performing devolved functions, such as DADOs, should in principle become employees of provincial or local government. For additional staff, the functions of provincial and local governments need to be clearly specified, and the requisite budgetary requirements to address those functions should be determined before additional hiring is done at those levels. It is promising that around one-third of DADOs/DLOs either have no preference where they serve or would like to continue on in their current district, and that one-quarter say that they would prefer to serve close to their home districts. This suggests that a policy similar to that of Indonesia—allowing staff to choose between staying where they were or returning to their home at the time of decentralization—has some promise in Nepal to aid staff retention. It is also highly encouraging that one-quarter of DADOs and DLOs already report that they aspire to work in provincial-level line ministry offices, as opposed to federal-level ones, this early in the transition process. However, as in Indonesia, this could result in uneven human resource capacities by province, already a significant problem. Moreover, none of the DADOs/DLOs currently serving in the remote mountain districts report wanting to stay there. All of this suggests that incentives may be needed to retain civil servants in remote areas.

- ***Provide staff with incentives to form closer linkages between research and extension through institutional mechanisms and/or mandated job requirements***

As noted earlier, strengthening the linkages between research and extension has long been a challenge in Nepal. It will be important that the restructuring does not worsen this situation, since research will occur at the federal and provincial levels while extension is devolved to the local level. Restructuring offers the opportunity to address this weakness through institutional mechanisms and mandated job requirements. India's KVK model of using frontline researchers in the field or its ATMA, which brings together researchers, extension agents, and farmers, offers one useful institutional model.

Indonesia's AIATs offer another approach whereby federal research institutes pass on their findings to Indonesia's regional research institutes. As discussed earlier, AIATs, in turn, are responsible for testing and adapting technologies to suit local conditions and to train agricultural extension workers through regular trainings and workshops. Two institutional characteristics have been key to AIATs' success: (1) provincial-level autonomy over agricultural research and education, which has enabled provinces to adapt research to meet local needs, and (2) strong commitment from the federal government for the institutions, including providing funding and assistance with coordination among AIATs.

Both Malaysia and South Africa provide examples of the mandated requirements whereby extension workers must spend a share of their time learning about new technologies at regular intervals in order to retain their qualifications as extension officers.

- ***Consider more competitive incentive packages for NARC in order to retain high-quality public agricultural research staff in the wake of restructuring***

The uncertainty of public-sector reforms, coupled with more competitive opportunities in the private or university settings, can dampen the morale of agricultural research staff and lead to staff attrition. This was one of the main lessons from South Africa's experience with restructuring in the wake of federal reforms during the 1990s, when more than 300 FTEs defected from the ARC to university jobs in less than a decade. NARC should give serious consideration to offering more promotional opportunities and rewarding good performance and publications, and begin tackling disproportion differences in pay scales, such as with TU, as the restructuring process unfolds.

Coordination

Greater autonomy for subnational governments, both provinces and local government, will create challenges for policy coordination in a variety of ways, including agricultural policy formulation and implementation, agricultural research and extension oversight, and food safety regulation.

- ***Establish a service delivery unit or a vertical coordination unit within MoAD at the federal level***

With elected local governments having greater autonomy over development priorities, delivering on national agricultural and food security goals—including those outlined in the ADS—will be more difficult for MoAD. Through the agricultural district and the VDC block grant, Nepal has ensured that agriculture receives priority at the local level. Historically, India has followed a similar model by earmarking intergovernmental transfers. However, this approach stymies fiscal autonomy of elected local governments.

Going forward, strong coordinating mechanisms between federal and provincial governments, between provincial governments, and across ministries involved in the agricultural sector will be needed that do not undermine the autonomy of local governments. In terms of coordinating between and among tiers of government within the agricultural sector in Nepal, a coordinating committee similar to the “MinMecs” model from South Africa could be adopted. This would ensure regular interactions between national-level ministers in the agricultural sector (from all ministries involved in agricultural development in Nepal) and their provincial- and local-level counterparts. A similar coordinating committee could be formed at the province level to ensure that agricultural policies and strategies are coherent and complementary across provinces, and that there is interministerial coordination at the provincial level within the agricultural sector.

In addition to augmenting accountability, service delivery units and performance contracts offer another useful model by which to facilitate both vertical and horizontal coordination. However, service delivery units derive their effectiveness in part from political leadership above the line ministry, usually from the office of the prime minister or the president. Adapting such a model in Nepal would require high-level support from within the government. Nonetheless, some lessons can be adapted even without the formal establishment of a service delivery unit—namely, identifying a few priority metrics for

monitoring and reporting that go beyond budget execution, and instituting frequent reporting on these priority metrics to help identify any bottlenecks in real time.

Such a coordinating unit could be established in either MoAD's Planning Division or be an expanded mandate of the Policy and Coordination Division with International Cooperation, which currently appears to focus on coordinating foreign aid projects.

- ***Prioritize standards, policies, and accreditation for extension workers within MoAD's Directorate of Agricultural Extension at the federal level while Provincial Departments of Agriculture focus on coordinating district extension plans***

Even though extension will be primarily a local-level function, it is important to ensure coordination across tiers so that extension workers have equivalent training across the country. Following the South African model, the local government at the VDC level would implement extension services and liaise with other frontline service workers relevant to agriculture. At the federal level, the Directorate of Agricultural Extension within MoAD could focus exclusively on developing standards, policies, and accreditation for extension workers. Provincial agricultural departments could focus on training extension workers, facilitate information sharing among them, and coordinate VDC level activities. Regarding the latter, the Indian model of using district-level extension plans to create a state-level extension plan, which in turn becomes the basis for training extension workers, would be a viable option in the case of Nepal.

- ***Enable a federal secretariat within MoAD to oversee coordination of food safety regulations across provinces in the short term, until an autonomous food security authority can be established***

In countries such as South Africa, the lack of coordination in norms and standards of food safety across provinces has been a major challenge. Nepal will face a similar challenge as provinces establish their own policies on food regulation and have differential access to food imports and exports. To avoid confusion and endangering public health, a coordination mechanism is paramount. In the absence of a Food Quality Control or Food Safety Authority, which may be established in the long term, MoAD could establish a mechanism similar to Kenya's NFSCC. This mechanism could increase awareness of the impact of food safety and quality, coordinate all food safety activities in the country, and initiate the revision and harmonization of all the relevant acts of Parliament. Such a committee could be established after existing revisions of Nepal's food safety policy are adopted into law.

- ***Have NARC play a primary role in setting the national agenda for agricultural research at the federal level***

Given existing capacity and resource constraints, establishing multiple public agricultural research institutes in each province is not feasible. However, farmers in every province still need access to research that is appropriate for their agro-ecological zone. If the zones of excellence approach is taken (see discussion above), there will need to be strong coordinating mechanisms across provinces to ensure policy coherence, oversight, and dissemination of findings. NARC is well positioned to take on this role, setting the national agenda for agricultural research, serving as a national repository for research findings, and communicating findings across provinces. Similar to the All India Coordinated Research Projects led by ICAR in India, NARC should also ensure that resources are directed to important commodities at the provincial level.

6. CONCLUSIONS

Nepal's small size and limited resources pose a number of challenges for its transition to a federal country. At the same time, this institutional transition offers a unique opportunity to address existing weaknesses in the current policy process and institutional structure, including within the agricultural sector. This paper highlights critical concerns and options for MoAD going forward, especially with respect to agricultural policy planning, agricultural research, agricultural extension, and food regulatory control. The paper aimed to adopt a holistic approach that takes into account the concerns of MoAD while illustrating the broader administrative, fiscal, and policy process context in which decisions related to the agriculture sector will henceforth operate. Since Nepal is embarking on a pathway that has already been well-trodden by other countries, we drew on the experiences of India, Indonesia, Kenya, Malaysia, and South Africa to highlight institutional innovations that could be adopted and the pitfalls to avoid.

Notwithstanding the value of a comparative perspective, Nepal is considerably smaller than most countries that have adopted a federal structure, in terms of both population and land area. Globally, countries with a federal structure, on average, have a population of around 130 million and a land area of over 3 million square kilometers, compared to Nepal's population of roughly 20 million and land area of less than 150,000 square kilometers.⁶¹ Thus, in adapting lessons from other countries with a federal structure, it is important to adjust structures and institutions according to Nepal's relatively smaller population and land area. For example, while India maintains state-level agricultural recruitment boards to handle recruitment and screening for agricultural technicians, Nepal's smaller size makes such an institution less feasible (and less necessary) at the state level.

Moreover, the new Constitution appears to favor bypassing the district level for service delivery functions at the local level in favor of the VDCs, which will be reamalgamated from their current 3,200 to approximately 1,000. VDCs in Nepal are numerous and fragmented, and they often have low administrative capacity. By way of comparison, the average third-tier local government unit in Indonesia governs a population of nearly half a million people (Booth 2014) compared to an average of 6,000 households within a given VDC in Nepal. In Kenya, the government amalgamated more than 100 local authorities into the new 47 counties. For Nepal, it will be critical to ensure that the need to reach local citizens and provide equitable representation in government is balanced with the lessons learned from scale economies for efficient delivery of services. Boex (2012b) therefore recommends that the local government be at a level between the current district and the VDC level, with perhaps 150 to 250 total local government units. Whatever the ultimate size and shape of these units, it will be important to calibrate the responsibilities given to them with regard to their capability to fulfill them. Giving responsibilities to local government units that exceeds their capacity risks undermining public support for decentralization as a whole and the legitimacy of the new local government units.

Despite these caveats, Nepal's considerable experience with local governance and decentralization will facilitate its adaptation to the new federal structure. During the past decade, Nepal has institutionalized the Fourteen Point Planning Process, which has given citizens the capacity to participate in public forums on local development, and to plan projects and monitor their outcomes. More than a decade's experience with planning local agricultural development projects has taught citizens how to articulate their demands concerning the priorities of local agricultural development. This was exemplified by the highly participatory process surrounding the crafting of the ADS. Thus, Nepal's strong history of participatory planning will make the transition into a federal system—with more demand-based agricultural services—easier than if these institutional frameworks and processes had not existed.

⁶¹ Authors' calculations using World Development Indicators (2015).

APPENDIX A: BACKGROUND TABLES

Table A.1 List of interviewees, Kathmandu, Nepal, January 2016

Organizations met	
1	Ministry of Agricultural Development (MoAD), Singhadurbar*
2	Policy and International Cooperation Coordination Division, MoAD, Singhadurbar
3	Ministry of Livestock Development, Singhadurbar
4	Department of Agriculture, Hariharbhavan*
5	National Farmers Groups Federation, Nayabajar, Kathmandu
6	Agro-Enterprise Centre, FNCCI, Teku, Kathmandu
7	National Federation of Agricultural Professional Associations
8	Nepal Resident Mission, ADB. Lazimpat
9	KISAN Project, Sanepa
10	International Development Enterprises (IDE), Sanepa
11	Planning and Coordination Directorate, NARC, Singhadurbar Plaza
12	Prepare Project
13	Department of Food Quality Control, Babarmahal*
14	Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED), Nayabato*
15	District Agriculture Development Office, Lalitpur
16	Ministry of General Administration, Singhadurbar
17	Ministry of Federal Affairs and Local Development (MoFALD)*

Source: Authors.

Notes: In all, over 25 stakeholders were interviewed across 17 different agencies and organizations. Asterisks (*) denote agencies where multiple stakeholders were interviewed. NARC = Nepal Agriculture Research Council.

Table A.2 List of proposed provinces

Province No. 1	Province No. 2
Taplejung	Saptari
Panchthar	Siraha
Ilam	Dhanusha
Terhathum	Mahottari
Dhankuta	Sarlahi
Bhojpur	Rautahat
Khotang	Bara
Solukhumbu	Parsa
Okhaldhunga	
Udayapur	
Jhapa	
Morang	
Sunsari	
Province No. 3	Province No. 4
Dolakha	Gorkha
Ramechhap	Lamjung
Sindhuli	Tanahu
Kavrepalanchowk	Kaski
Sindhupalchowk	Manang
Rasuwa	Mustang
Nuwakot	Parbat
Dhading	Syanja
Chitwan	Myagdi
Makwanpur	Baglung
Bhaktpur	Nawalparasi (east of Bardaghat Susta)
Lalitpur	
Kathmandu	

Table A.2 Continued

Province No. 5	Province No. 6
Nawalparasi (west of Bardaghat Susta)	Rukum (western part)
Rupandehi	Salyan
Kapilbastu	Dolpa
Palpa	Jumla
Arghakhachi	Mugu
Gulmi	Humla
Rukum (eastern part)	Kalikot
Rolpa	Jajarkot
Pyuthan	Dailekh
Dang	Surkhet
Banke	
Province No. 7	
Bajura	
Bajhang	
Doti	
Achham	
Darchula	
Baitadi	
Dadeldhura	
Kanchanpur	
Kailali	

Source: 2072 Constitution (unofficial Translation by Nepal Law Society, International Institute for Democracy and Electoral Assistance, and UNDP).

Notes: UNDP = United Nations Development Programme; DDC = District Development Committee; VDS = Village Development Committee; MoLD = Ministry of Livestock Development; DADO = District Agricultural Development Officer; DLO = District Livestock Officer.

APPENDIX B: DECENTRALIZATION IN NEPAL PRE-2072 CONSTITUTION

History of Decentralization in Nepal

In 1961, the number of districts in Nepal increased from 35 to 75 while village and town *panchayats* (assemblies) were established. These local bodies were responsible for development activities financed through both own revenues and resources from the central government. Several years later, local development officers (LDOs) were appointed to oversee the functioning of local government bodies. In 1973, the government also demarcated the country into initially four and then five development regions, each of which had its own designated headquarters. The intention was for the government to institute regional offices at the headquarters so as to oversee and coordinate district-level programs (Asia Foundation 2012). In the early 1990s, with the restoration of parliamentary democracy, the same structure was retained but the local bodies were renamed village development committees (VDCs) and municipal and district development committees (DDCs). Today, there remain 75 DDCs with a population of approximately 300,000 each. At the subdistrict level, there are 217 municipalities and 3,157 VDCs, with the latter having an average population that is approximately less than 6000 residents. In turn, each VDC has nine wards that, to the greatest extent possible, consist of populations of equivalent size (GoN 1999).

Through extensive donor support channeled through the Local Governance and Community Development Program (LGCDP) and administered by MoFALD, more than 31,000 Ward Citizens Forums (WCF) have been established since 2008, along with almost 5,000 Citizen Awareness Centres (CACs).⁶² Given the absence of elected local government, the WCFs help inform citizens of how local government operates and their rights to demand certain services. The WCFs consist of 25 members representing various sectors and stakeholder groups and are representative of ethnic groups, caste, and gender. Ideally, the demands articulated in the WCFs are communicated to the VDC. The CACs provide Nepalis with information about voter and citizen registration, provide classes, and engage in other activities to strengthen the “demand” side of local governance.⁶³

Following the creation of a high-level decentralization coordination committee in 1996, the Local Self-Governance Act (LSGA) was enacted in 1999. The LSGA is widely viewed as a landmark piece of legislation that accorded greater responsibilities to these subnational structures. In particular, local bodies were charged with setting development priorities, allocating budgets, and monitoring the implementation of local development projects (Carter Center 2014).⁶⁴ The DDCs have 48 functions in 15 different domains, while VDCs have the same number of functions in 11 areas.⁶⁵ The LSGA also stipulated that VDC committees consist of 11 elected representatives, including a chairperson, vice chairperson, and nine ward chairpersons, as well as two nominated members. A civil servant is appointed by the central government to serve as VDC administrator (UNDP 2014).

The LSGA had stipulated that all local bodies have their own elected political leadership. However, by 2000, civil conflict had affected about half of the 75 (predominantly rural) districts. Insurgents often targeted VDC offices, forcing elected officials to flee their villages (Carter Center 2014). Consequently, in 2002, the government decided that it was not possible to hold new local elections and instead allowed the terms of those officials who were elected in 1998 to expire. Therefore, for the last 14 years, local governments effectively have been run by civil servants appointed by the Ministry of Federal Affairs and Local Government (MoFALD).

The implementation of the LSGA was overseen by the Decentralization Implementation Plan (DIP), which sought to improve transparency, accountability, and public participation by also devolving

⁶² The LGCDP is currently in its second phase and anticipated to end in mid-2017.

⁶³ Interview with ADB, Kathmandu, January 12, 2016.

⁶⁴ “Local bodies” is the collective term to refer to DDCs, VDCs, municipalities, and wards.

⁶⁵ For the DDCs, these functions include agriculture, rural drinking water and settlement development, power, works and transport, land reforms and land management, women and disadvantaged people, forest and environment, education and sports, wage labor, irrigation, soil erosion control and river training, information and communication, language and culture, cottage industry, health, and tourism (Asia Foundation 2012).

authority in three sectors to local bodies: health, education, and agriculture and livestock extension. In this way, local communities were intended to manage agricultural extension offices, health posts, and primary schools. In the absence of elected local governments, however, line agency officials effectively have been assigned to carry out these responsibilities within the DDCs (Nepal, NPC 2006). These include District Agricultural Development Officers (DADOs), District Livestock Officers (DLOs), District Education Officers, and District Public Health Officers.

Another key component of the LGSA was the requirement that all local bodies formulate annual and five-year development plans based on citizen input. The Fourteen-Point Planning Process provides the guidelines for a participatory planning, budgeting, and monitoring process. This process requires both downward communication from line ministries, MoFALD, and the National Planning Commission (NPC) to local bodies on annual budget ceilings and spending guidelines as well as upward communication from the grassroots level on local development plans up to local bodies and, ultimately, to the NPC. The following two sections describe the Fourteen-Point Planning Process in full and how it relates to the agricultural sector specifically as well as fiscal decentralization in Nepal.

Background on Nepal's Fourteen-Point Planning Process

Table B.1 Fourteen-Point Planning Process and implications for agriculture

Overall process description	Implications for agriculture	Timeline
<p>1 <i>Budget ceilings and spending guidelines</i></p> <ul style="list-style-type: none"> Line ministries communicate annual budget ceilings to district-level line departments MoFALD communicates forecasts of annual conditional and unconditional grant amounts to local bodies (DDCs, VDCs, and municipalities) 	<ul style="list-style-type: none"> MoAD and MoLD communicate annual budget ceilings to DADOs and DLOs. Local bodies are also required to spend 15% of block grant resources for spending on agriculture. 	By Nov. 15
<p>2 <i>Review of budget ceiling and guidelines</i></p> <ul style="list-style-type: none"> District Resource Estimation Committees estimate total resource envelope (a combination of conditional and unconditional block grants, own-source revenues, line ministry budgets, and grants from other organizations) available to each local body for the upcoming year. 		3 rd week of Nov.
<p>3 <i>Preplanning workshop</i></p> <ul style="list-style-type: none"> The DDC organizes a preplanning workshop to communicate budget ceilings and guidelines with VDCs, municipalities, district line ministry officers, and NGOs. 	<ul style="list-style-type: none"> DADOs participate in this workshop. 	4 th week of Nov.
<p>4 <i>VDC/municipality meeting</i></p> <ul style="list-style-type: none"> VDCs/Municipalities prepare an estimate of overall budget based on estimated size of block grants and own-source revenues. 		3 rd week of Dec.
<p>5 <i>Selection of projects from community level</i></p> <ul style="list-style-type: none"> Community organizations in association with the Ward Citizen Forum (WCF) initiate the planning process at the ward level. WCF facilitates settlement-level assemblies and discussions of project proposals and development priorities to be submitted to the ward. 		3 rd week of Dec.

Table B.1 Continued

	Overall process description	Implications for agriculture	Timeline
6	<p><i>Ward committee meetings</i></p> <ul style="list-style-type: none"> The WCF is responsible for selecting priority projects from among the submitted inputs, and classifying whether priority areas are activities that can be implemented (1) by communities themselves, (2) within the VDC/municipality budget ceiling, (3) through referral to the district or central level, or (4) by being carried over from the prior fiscal year. 	<ul style="list-style-type: none"> Because 15% of the local bodies' block grant is earmarked for agriculture, in theory WCFs need to select projects designed to promote local agricultural development within this process. 	4 th week of Dec.
7	<p><i>VDC/municipality general meeting</i></p> <ul style="list-style-type: none"> Project proposals submitted from the wards are discussed within VDCs/municipalities. They are discussed in 3 different forums: <ul style="list-style-type: none"> Coordinating meeting with NGOs and development agencies Sector committee meetings Integrated Plan Formulation Committee Meeting 	<ul style="list-style-type: none"> An Agriculture, Forest, and Environment Committee at the VDC/ municipality level is responsible for discussing and analyzing plans submitted within these sectors/themes. 	1 st week of Jan.
8	<p><i>Village/Municipal Council general meeting</i></p> <ul style="list-style-type: none"> VDC/Municipal Councils look for synergies across projects, and prioritize proposed projects. They classify selected projects into 3 types: projects to be financed solely through VDC/ municipality budget, projects that need at least partial support from DDC budgets to be financed, and projects that they recommend and that would be wholly financed by DDCs. Projects that are selected to be wholly funded by VDC/municipality budgets but that do not require any additional approvals; projects that are recommended for DDC funding are forwarded to the <i>Ilaka</i>-level planning process. 	<ul style="list-style-type: none"> 15% of the projects selected to be funded through VDC/ municipality budgets should be designed to promote local agricultural development. VDC/Municipality councils in theory need to submit additional agricultural development projects up to the <i>Ilaka</i> level for planning to fulfill the 15% agriculture earmark for the DDC block grant. 	By 15 Jan.
9	<p><i>Ilaka-level plan formulation</i></p> <ul style="list-style-type: none"> <i>Ilaka</i>-level Planning Meeting is designed to: (1) review those projects that were submitted at the VDC/municipality level and have moved up to the DDC level in light of the district's periodic (five-year) plan, (2) study project feasibility, and (3) classify the projects based on sectors and national development priorities. 		1 st week of Feb.
10	<p><i>Sectoral Plan Formulation Committee Meeting</i></p> <ul style="list-style-type: none"> Sectoral committees at the district level (Economic Development, Social Development, Forest and Environment, and Institutional Resources and Capacity Development) prioritize the projects submitted from the <i>Ilaka</i> level and submit their recommendations to the DDC. 	<ul style="list-style-type: none"> DADOs participate in district sectoral committee meetings to prioritize projects submitted through the <i>Ilaka</i> level. 	3 rd week of Feb.

Table B.1 Continued

	Overall process description	Implications for agriculture	Timeline
11	<p><i>District Integrated Plan Formulation Committee Meeting</i></p> <ul style="list-style-type: none"> • The District Integrated Plan Formulation Committee (IPFC) reviews plans submitted by the sector committees to eliminate any duplicate activities, to revise plans to improve complementarities across sectors, and to ensure that submitted projects fall within the DDC ceiling budget. • They then recommend projects to DDC Council for approval. 		4 th week of Feb.
12	<p><i>District Development Committee Meeting</i></p> <ul style="list-style-type: none"> • DDC meets to discuss projects endorsed by the IPFC, ensuring that proposed projects are below the district budget ceiling. 		1 st week of Mar.
13	<p><i>District Council Meeting</i></p> <ul style="list-style-type: none"> • DDC classifies projects that could be forwarded for central-level priority, ensures that district-level programs are within district budget ceilings, and formally approves projects endorsed by the DDC. 		By 15 Mar.
14	<p><i>Submission of district development plan</i></p> <ul style="list-style-type: none"> • DDC submits official district-level plans. • DDC forwards projects that could be considered for central-level priority to the relevant line ministries, MoFALD, and NPC. • Line ministries and NPC at the central level review district plans to verify that they fit with budget ceilings and national sector priorities. If budgets or national priority guidelines aren't followed, plans are sent back with comments to DDCs. • NPC uses district-level recommendations for central priorities that emerge from the local planning process to create national-level plans. • NPC approves the national plan and submits it to the Ministry of Finance (MoF), which submits the budget to parliament for approval. 	<ul style="list-style-type: none"> • In addition to the agricultural development projects and activities approved for funding through the VDC and DDC block grants, locally planned agricultural development activities could be forwarded to MoAD and MoLD for funding through the line ministry budget. 	By 25 Mar.

Source: Authors' elaborations; Local Self-Governance Act (GoN 1999); World Bank (2014a).

Notes: MoFALD = Ministry of Federal Affairs and Local Development; DDC = District Development Committee; VDC = Village Development Committee; MoAD = Ministry of Agriculture and Development; MoLD = Ministry of Livestock Development; DADO = District Agricultural Development Officer; DLO = District Livestock Officer; NPC = National Planning Commission.

Fiscal Decentralization in Nepal

In terms of fiscal decentralization, the Local Authorities Financial and Administration Regulations was passed in 1999 and subsequently amended in 2005. This legislation was aimed at refining the fiscal rights of the local bodies and developing the structure of intergovernmental fiscal relations, which are overseen by the LBFC. Each year, the GoN contributes a certain pool of resources for intergovernmental transfers that include both conditional and unconditional (“block”) grants. Both types of grants can be allocated to recurrent and capital expenditures. The conditional grants are typically earmarked for expenses related to education, roads, and other local infrastructure spending (GoN 2015a).

The block grants intended for capital expenditures consist of a minimum amount distributed equally across all local bodies, plus a formula-based distribution that accounts for variations in population, poverty, land area, and district costs (Table B.2 below).⁶⁶ The formula-based approach was introduced in 2008–2009 by the MoFALD through the LGCDP project (ADB 2011). For example, as of 2014, the base amount for the DDCs was NPR 3 million, which is equivalent to 30 percent of the grant pool. The remainder is then allocated according to the criteria in Table B.2 below. For VDCs, the equal share varied between NPR 1.5 and 3 million (World Bank 2014a). There is also a performance based measurement that attempts to incentivize local governments to meet certain Minimum Conditions/Performance Management (MC/PM) criteria, such as proper financial management, approval of annual workplans and budgets, establishment of internal audit sections, timely appointment of auditors to audit accounts, and clear communication in advance by DDCs to VDCs of budget ceilings (Steffensen and Chapagain 2010).⁶⁷

Table B.2 Criteria for distribution of block grants to local bodies in Nepal

Factor	DDC	Municipality	VDCs
Equal share	3 million NPR		1.5 to 3 million NPR
Development criteria for remaining grant pool			
Population	40%	50%	60%
Poverty	25%	25%	
Land area	10%	10%	10%
District cost index	25%		30%
Weighted tax effort		15%	

Source: Boex (2012a); GoN (2015a).

Notes: DDC = District Development Committees; VDC = Village Development Committees.

A specific amount of the base share of the VDC block grants is intended for recurrent costs that can be used for administrative and operational expenditures at the VDC level. This amount varies depending on the type of “category” that a VDC is designated.⁶⁸ By contrast, the DDCs receive a separate recurrent grant to fund the salaries of DDCs’ civil servants, including LDOs, VDC secretaries, District Technical Officer (DTO) staff and for general administrative costs of the DDC (Boex 2012a).

⁶⁶ District costs refers to variation in unit costs across local bodies, especially with regards to constructing physical infrastructure (Boex 2012a). Formula based block grants were only introduced in 2008/2009 (UNDP doc).

⁶⁷ The MC/PM approach was initially piloted in 2004 in 20 districts through a UNCDF/DfID program and is now operational in all 75 districts (World Bank 2014a).

⁶⁸ There are 6 categories of VDCs (Boex 2012a).

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