



Seed regulatory  
framework analysis

# RTB

# User Guide

User Guide to Seed  
Regulatory Framework  
Analysis and Implications  
for Vegetatively  
Propagated Crops

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### User Guide to Seed Regulatory Framework Analysis and Implications for Vegetatively Propagated Crops

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# Acronyms

|     |   |
|-----|---|
| CIP | International Potato Center                         |
| FGD | Focus group discussion                              |
| KII | Key informant interview                             |
| NGO | Non-governmental organization                       |
| QDS | Quality declared seed                               |
| RTB | CGIAR Research Program on Roots, Tubers and Bananas |
| VPC | Vegetatively propagated crop                        |

# Overview

Farmers who grow vegetatively propagated crops (VPC) face certain limitations in access to seed. Some of these constraints are related to policy, institutions and markets. This user guide describes a tool for conducting seed regulatory framework analysis for VPCs. It addresses quality assurance models (e.g. seed certification) and other regulations that can increase availability and access to quality VPC seed for smallholders. The methods used to collect and analyze the data include literature reviews, analysis of regulatory documents, focus group discussions and validation workshops. Stakeholder consultations through standardized key informant interviews are especially important. The resulting analysis is used to advise policy makers and regulatory bodies.

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# User Guide to Seed Regulatory Framework Analysis and implications for Vegetatively Propagated Crops

## INTRODUCTION

Many developing-country farmers cultivating vegetatively propagated crops (VPCs)—such as cassava, potato, sweetpotato, and yam—face constrained access to quality planting material. This challenge is distinct from the challenges facing cereal crops and is associated with the unique biological and economic nature of vegetative propagation. Although technical solutions exist, other limiting factors relating to policies, institutions, and markets also shape VPC seed systems, e.g., quality assurance mechanisms, certification regulations, plant health standards, and plant variety protection. VPCs are widely grown in tropical countries, where it is important to provide actionable evidence on policy and investment options to accelerate seed system and market development to improve food security and agricultural development.

## Scope of the tool

This user guide describes how to conduct analysis of national seed regulatory frameworks and implications for VPCs. The tool uses an exploratory approach to address the question of whether there are appropriate quality assurance models that can increase availability and access to quality seed for VPCs cultivated by smallholder farmers, while simultaneously minimizing risk of spreading of pests and diseases that might threaten their yields and incomes. Different methods can be used to collect, analyze and triangulate data. These include literature review, analysis of regulatory documents, stakeholder consultations through key informant interviews, focus group discussions and validation workshops. The focus can be on one or across crops. Agricultural researchers and policy analysts can use the tool to provide information to policy makers and regulatory bodies. Analyzing current policy initiatives and successful models that incentivize cost-effective VPC seed systems for smallholders is intended to encourage consideration of more appropriate policy options.

## RESEARCH QUESTIONS

Before planning a VPC seed system intervention on policy and regulation, some questions could include:

1. What types of public policies and regulations are in place for the subject crops in the target area? What policy and regulatory reforms are currently underway, and how do they increase access and availability of quality VPC seed?
2. What is the type and level of quality assurance that is cost-effective to increase access, availability, and quality of VPC seed?
3. What types of public policies, regulations or reforms are required to provide effective quality assurance to increase access, availability, and quality of VPC seed?

## CASE AND SAMPLE SELECTION AND SIZE

The selection of crop cases should capture key dimensions of the heterogeneity across roots, tubers and bananas, while also highlighting commonalities. This can provide a basis for a more generalizable framing of the policy and regulatory issues and options for VPC seed systems in a specific country context. Geographically, key informant interviews (KIIs) and focus group discussions (FGDs) should be concentrated in regions where the focus crops were produced or where key stakeholders are concentrated, e.g. in the capital. Table 1 provides an example of the type and number of different stakeholders interviewed in three different countries where the tool has been validated. Purposive selection of different seed system stakeholders e.g. 20-40 organizations. 40-70 individuals from: public and private sector scientists and technicians working on quality VPC seed, public regulators of VPC seed, industry experts, entrepreneurs, traders, seed importers, NGOs, or others who produce, distribute or market VPC seed, and farmers and leaders of their associations who produce, use, or buy VPC seed.

**Table 1.** Example of type of interviews conducted in Kenya potato case study.

| <b>Actor category</b>   | <b>Organizations</b> | <b>No. of Individuals</b> |
|---|----------------------|---------------------------|
| Policymakers, advisors, and regulators                                    | 5                    | 14                        |
| Public research agencies, institutes, centers, and stations               | 4                    | 11                        |
| Small-scale seed entrepreneurs, seed enterprises, and related enterprises | 6                    | 16                        |
| Medium- and large-scale seed companies                                    | 7                    | 12                        |
| Industry associations   | 2                    | 3                         |
| Seed traders  | -                    | 2                         |
| Seed users  | -                    | 16                        |
| <b>Total</b>  | <b>24</b>            | <b>72</b>                 |

Source: McEwan et al., 2021.

## METHODS

Mixed methods should be used to be able to triangulate sources of data and stakeholder perspectives. These include:

- 1) literature reviews of prior work in the social and biological sciences on strengthening quality assurance systems for VPC seed production and distribution for the focus crop(s) and regions
- 2) review and analysis of public policies, regulations, rules, and guidelines for quality assurance of VPC seed production and distribution
- 3) review of grey literature and project reports, as well as public policies and regulations governing VPC seed production and distribution

4) workshops with key stakeholders to validate and triangulate data and information collected

5) field visits using key informant interviews and focus group discussions with seed producers, traders in local markets where formal and common seed is traded, and researchers at experimental stations that produce seed.

Key informant interviews can be used to collect field data and write case-studies for a specific seed system. Case studies are appropriate when there is little systematic or generalized knowledge about a topic (Yin 1993, 2003; Stake 1995; Eisenhart 1989, 2007). Specific case studies can be planned based on a reading of the available literature, expertise from within the research team, and the interests of stakeholders in the research (see the 'User guide to the multi-stakeholder framework for intervening in root, tuber and banana seed systems,' Bentley et al., 2020).

**An interview checklist** is a list of questions to ask during the interview. If separate interviews are going to be conducted by more than one researcher, with many key informants, and the researchers want to systematically ask the same questions of all respondents, you will need to commit to a set of good questions. The interview guide should be pre-tested with a handful of key informants before starting to gather the data. This will help to refine the interview guides.

In an open-ended interview, the researcher goes into the meeting with some general topics to discuss, but no predefined questions. Such exploratory interviews can help identify research questions for further investigation using other tools.

**Using the RTB multi-stakeholder framework for intervening in root, tuber and banana seed systems**, key informants can be identified and may include:

- policymakers and their advisors
- seed inspectors or other representatives of regulatory agencies
- researchers and scientists
- agricultural educators
- extension agents
- representatives of non-governmental organizations
- representatives of seed companies, donors and donor project staff
- seed traders, retailers, and entrepreneurs
- officers and members of farmer organizations, associations, and cooperatives
- seed producers
- and seed users (farmers).

There should be purposive selection of different seed system stakeholders e.g. 20-40 organizations, 40-70 individuals. The interview checklists that have been validated in Kenya, Nigeria and Vietnam can be found in IFPRI et al., (2019). These KII checklists specifically ask about gender differences in perspectives on the use and implications of seed regulations for VPC seed producers and users.

Interviews should be conducted one-on-one with the key informant or in small groups of informants, as appropriate to protocols, culture, and organizational practice. For example, researchers, educators and seed

company executives are often most comfortable speaking alone, in their offices. Rural people tend to prefer speaking in small groups, under a shade tree.

**Finding informants.** Be sure to include women, youth and people from different walks of life, to avoid basing your findings only on the ideas of senior men. You may have colleagues who can help to identify (and introduce you to) key informants. You can also use the snowball method to get a larger sample of key informants; near the end of each interview, before you thank the key informants for their time, ask if they can recommend someone else that you can talk to.

**Informed consent and confidentiality.** Individuals recruited for participation in the key informant interviews and focus group discussions described above should be introduced to the study through a spoken script to obtain their verbal consent to participate in the interview. The interviewers read a text out loud, stating their names, organization, purpose of the study and explaining that the interviewee has the right to reject the interview or skip questions. This spoken text also promises confidentiality for the interviewee, so the qualitative data collected through these interviews cannot be made publicly available, because the interviewee's identity is documented in the interview notes. As appropriate, consent may also be requested to take photographs and record the interview. At the end of the interview ask the respondent if they have any further comments to add, or their own questions. Remember to follow local protocols in wrapping up the interview with appreciation for the participants' time and insights.

**Provide contact details.** Give each interviewee a business card or write a short paragraph with your name(s), phone numbers, where you work and a short summary of your work. This helps to put people at ease, and they can tell their colleagues or neighbors who visited them and why.

**Translation.** No matter how many languages you speak, sooner or later you will need a translator. The best translators are drawn from within the research team. Or you can engage a local translator. In some places, like northern Ghana, or Benin, for example, there are so many local languages that you may need a new translator almost every day if you are talking to seed users. In that case, you may have to find a person in the village who speaks English or French and can translate for you.

Extensionists or officials who act as translators can be especially good at pushing their own agenda during the meeting. Discuss the interview with your translators before you start. Tell them why you want to gather this information and explain that you want to know everything people say, and that the translator should not ask his own questions. If you learn a few words in the local language, e.g. for "seed" and the names key crops, you may be surprised to find that you start to understand some of what is said.

**Taking notes.** Work in a team of two people (or three, if you are using a translator). One person asks the questions and maintains eye contact with the interviewee, while the other takes notes. You may print off your interview guide, but leave lots of blank space between each question, for taking notes. Or you may write in a notebook. Write down the key informant's name, mobile phone number, and the date of the interview. Type your interview notes the same day and review them with your team members while they are still fresh in your mind.

**Short follow-up telephone interviews.** As you are writing your notes, especially if you are working with a translator, you may realize that you misunderstood something, or did not get the answer you needed. You can call the informant back on the phone and ask for a quick clarification.

**Sample interview guides.** This user guide is accompanied by a set of key informant interview guides on VPC seed systems (IFPRI et al., 2019). There is an overview and 14 separate guides for different types of stakeholders (e.g. seed users, policy makers, seed traders). These guides are free to download. You may use them as they are or adapt them for your own topic.

## ANALYTICAL PERSPECTIVES

From a conceptual standpoint, there are several ways to approach the analysis of stakeholder interactions, policy and regulatory space that influence the design and implementation of quality assurance systems for seed potato. We offer several analytical perspectives here to motivate such analysis.

The **neoclassical economics viewpoint** treats quality seed as an input to production that is superior to lower-quality, own-saved “farm seed” or seed exchanged among neighbors, but that also depreciates over time as diseases accumulate, which negatively affect yields (Fuglie et al., 2006). This model suggests that, in the aggregate, as more and more farmers use quality seed, they experience increased profits at a declining rate, i.e., margins fall. This model provides a framework with which to analyze the economic outcomes of alternative seed sources with quality differences. At a very basic level, this model provides useful guidance for thinking about seed systems but tends to overlook alternative institutional arrangements which emerge in the absence of competitive markets and perfect information.

These issues are better addressed by the theory of induced “**institutional innovation**” or the response of social and economic institutions to relative factor scarcities (Ruttan and Hayami, 1998, North, 1990, Akerlof, 1997). For example, VPC seed users facing production constraints due to the high cost of quality seed in the market may organize, lobby, and petition organizations and actors to undertake reforms to resolve this constraint. The costs at issue here arise from both high transaction and transportation costs, both of which increase the price of seed and undermine seed market coordination. Transaction costs increase with the cost of finding and authenticating quality seed, which must be accompanied by an authentication signal, for example, a quality assurance certificate or the personal endorsement of a seed provider. In the absence of such quality signals, seed users resort to relational transactions in which repeated transactions eventually lead to trust and each actor, especially the sellers, seeks to protect their reputation.

However, the precise designs of such signaling mechanisms may be influenced by the way actors view the problem. The previously mentioned models do not consider how actors use different language to identify and define a problem and construct a shared understanding of the problem (Head and Alford 2013; Schneider and Ingram 1993). Nor do they identify or account for the role played by advocacy coalitions and networks in advancing policy solutions, state functions, or institutional architectures that support the solutions that they propose (Sabatier 1988). The application of these concepts to seed systems is specifically illustrated by Kloppenberg (2010), Scoones and Thompson (2011), and Beko et al. (2016) who argue that policy change processes in seed systems cannot be considered strictly in technical (or technocratic) terms. Rather, they focus on the **power dynamics and political economy factors** that play out among seed system actors and that lead to the formation of seed system paradigms that benefit or favor one group over another. Such paradigms may relate directly to policies that shape the level of state vs. private governance of the system, or the degree of regulation and the entities mandated to regulate. Configurations of actors coalesce and shift around contrasting, but sometimes overlapping interests. Recognizing these diverse narratives can contribute to broader discussions on options and alternative pathways for seed quality assurance.

To fit the concepts of framing, narratives, and advocacy coalitions into the **sphere of policy change**, the framework (known as the Kaleidoscope Model) developed by Resnick et al. (2018) can be used to identify drivers of policy change, and to analyze how ideas, interests and institutions interact, and recognize potential entry points into the policy change process (Resnick et al., 2018). This framework is important since seed narratives favored by policymakers tend to the extremes, for example, the existential threat posed by seed counterfeiting and the predatory behavior of seed traders (Bold et al., 2017); or the threat posed by low crop yields and crop failures to national stability, law, and order.

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