



**FEED THE FUTURE**

The U.S. Government's Global Hunger & Food Security Initiative

# FEED THE FUTURE

S34D & NML WEBINAR

MARCH 2020





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The U.S. Government's Global Hunger & Food Security Initiative

# FEED THE FUTURE GLOBAL SUPPORTING SEED SYSTEMS FOR DEVELOPMENT – S34D

# S34D Consortium Partners



# IMPLEMENTING PARTNERS OF THIS STUDY



# ACKNOWLEDGEMENT

The authors wish to thank Amy Azania, Ian Barker, Colin Christensen, Bram de Jonge, Bert Visser, Geoffrey Otim, Dieudonne Baributsa, Duncan Onduru, Melinda Smale, Neils Louwaars, Shawn McGuire, and Robert Tripp for their insights and contributions provided in the development of this study. Expert comments provided in the development of this study are not attributed, unless approved and noted. The authors also wish to thank Folashade Oladipo, who was a Legal Fellow with the New Markets Lab, for her research support.

# S34D Quick Facts

- **Life of Activity:** 2018 – 2023
- **Sponsors:** Feed the Future through RFS / USAID through OFDA
- **Consortium:** Catholic Relief Services, CIAT/PABRA, IFDC, Opportunity International, Purdue University, Agri-Experience
- **Key Partners:** PIATA; AVISA; ISSD Africa; TASA; Seeds2B, IITA
- **Service Providers:** Kuza, New Markets Lab
- **Geography:** Global—responding to any USAID Mission’s request



## Activity Goal & Vision

- S34D's global experts in formal and informal seed systems, and humanitarian and emergency aid programming provide technical assistance that complement ongoing host government and USAID investments.
- S34D is unique in that we operate on the interface between the different systems.
- The Technical Assistance will address identified needs and gaps in the seed system and will strengthen the seed system to meet the agriculture-led inclusive economic growth objectives from the host government and USAID.
- S34D's vision is improved choices for farmers to access quality seeds for resilient livelihoods.
- S34D's goal is to improve the functioning of seed system through customized services to upgrade seed systems.

# OBJECTIVE OF THE PRESENT STUDY

- ❑ **Seed laws and regulations define the institutional framework of seed sector and enforcement of the rules – thus impacting who produces, markets, and sells seeds, of what varieties, and under what conditions.**
- ❑ **Using expert consultations and desk review, we have tried to learn from examples of case studies where, within existing legal and regulatory frameworks, national governments and partners have been able to navigate practical space for both formal and informal seed systems.**
- ❑ **The result is expanded choice of crops and varieties for smallholder farmers in last-mile markets.**



## WHAT ARE OUR GOALS FOR THIS WEBINAR?

- ❑ **Generate discussions on creating space for increasing choices for farmers.**
- ❑ **Identify gaps in literature and case studies, particularly with respect to implementation and impact.**
- ❑ **Learn about ongoing projects that could contribute to or benefit from this approach.**
- ❑ **Create (or strengthen existing) platform/community of practice to foster south-to-south learning.**

# STUDY AREAS

## □ Study Area #1: Extending Market Frontiers

- Directly impacts whether farmers can access seed of the right quality and variety at the right price in order to increase on-farm productivity
- Flexible approaches can connect the informal seed sector with broader seed system

## □ Study Area #2: Liberalizing Seed Quality Control Mechanisms

- Focuses on assuring the quality of seeds in the market
- Flexible approaches can guarantee quality of seed in the market while encouraging market entry for high quality traditional varieties

## □ Study Area #3: Improving Seed Counterfeiting Approaches

- Focuses on preventing counterfeit seeds in the market
- Good regulatory practices, use of technology, and consumer protection can increase the effectiveness of these measures

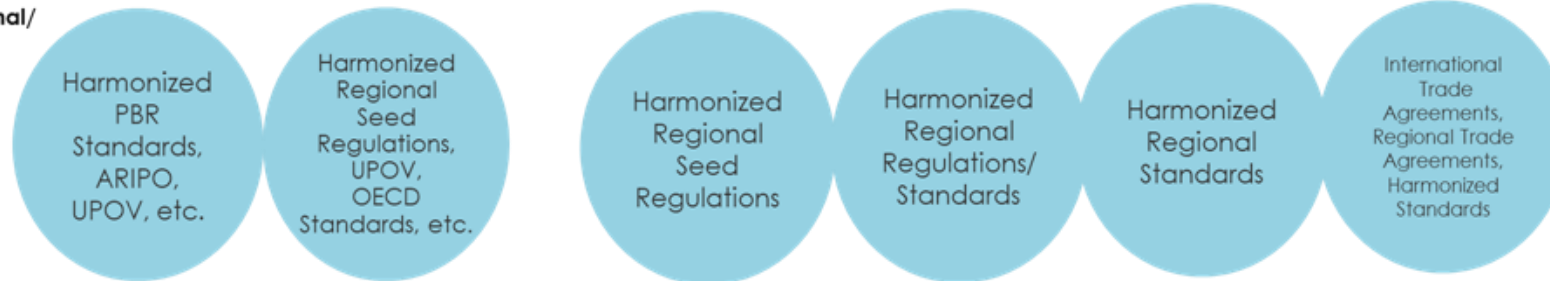
# STUDY DESIGN METHODOLOGY

- ❑ **Evaluated study areas based on (1) literature and legal review of relevant elements of the legal and regulatory framework in key countries; (2) evaluation of how these elements correspond to farmers' abilities and needs (Visser, 2016); and (3) qualitative assessment of regulatory design and implementation (NML, 2019).**
- ❑ **Validated approach to study areas and findings through semi-structured interviews with key industry experts (Amy Azania, Ian Barker, Colin Christensen, Bram de Jonge, Bert Visser, Geoffrey Otim, Dieudonne Baributsa, Duncan Onduru, Melinda Smale, Neils Louwaars, Shawn McGuire, Robert Tripp)**
- ❑ **Country examples and case studies chosen based on flexibility in regulatory systems corresponding to farmers' needs and unique regulatory design elements.**

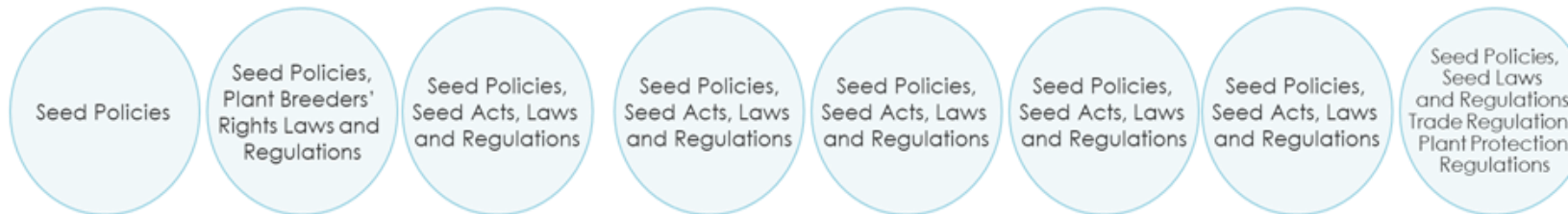
# SEED REGULATORY VALUE CHAIN

## Seed Regulatory Value Chain

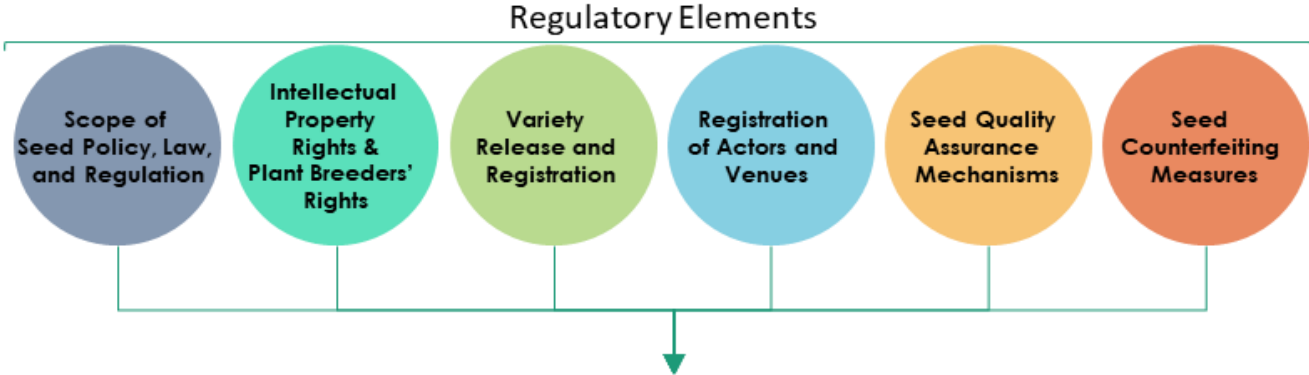
International/  
Regional



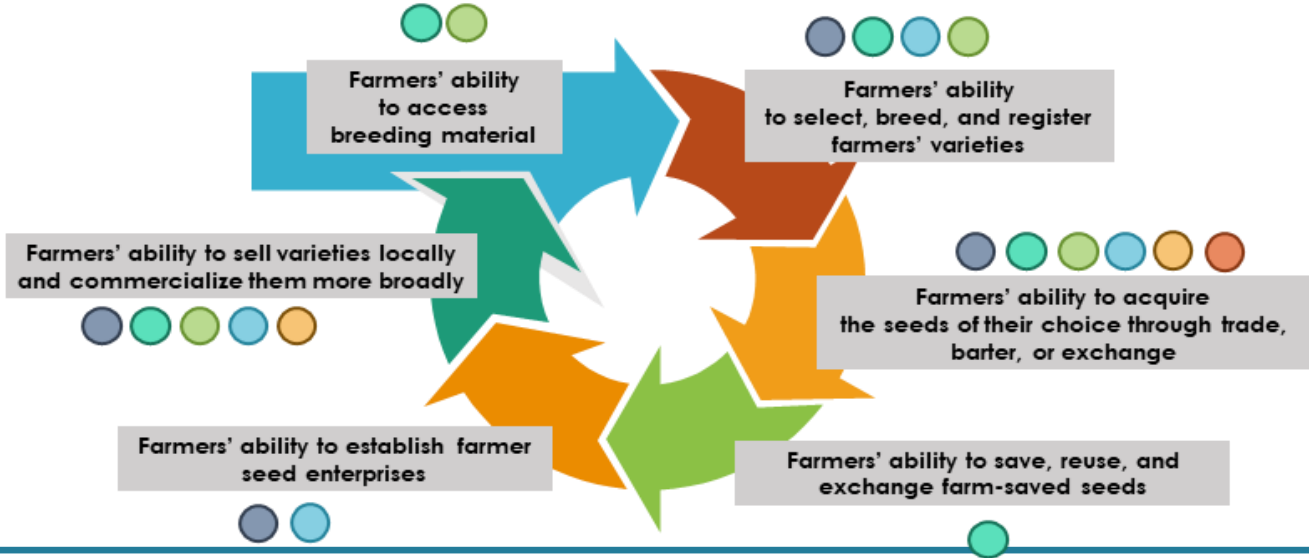
National



# RELATIONSHIP BETWEEN REGULATORY ELEMENTS & SEED SYSTEMS



How they bridge the gap between the formal and informal sectors



*Source: © 2020 Kuhlmann, Dey, Garces Escobar, and Abregu, “regulatory elements”*

Adapted from New Markets Lab, “Legal Guide to Strengthen Tanzania's Seed and Input Markets” (April 2016); and “Farmers’ Abilities” adapted from Visser, Bert, *A Summary of the Impact of National Seed Legislation on the Functioning of Small-Scale Farmers’ Seed Systems in Peru, Vietnam and Zimbabwe*, December 2015 and *A Study Into Seeds Laws in Selected Developing Countries*, Oxfam, March 16, 2016.

# METHODOLOGY FOR ASSESSING LEGAL AND REGULATORY DESIGN

## ▣ Regulatory Design Dimensions

- ▣ System Design (Comprehensive, Differentiated, or Market-Led)
- ▣ Regulatory Philosophy (Ex Ante or Ex Post)
- ▣ Degree of Regulatory Flexibility (adaptability to diverse stakeholders and needs in the market)

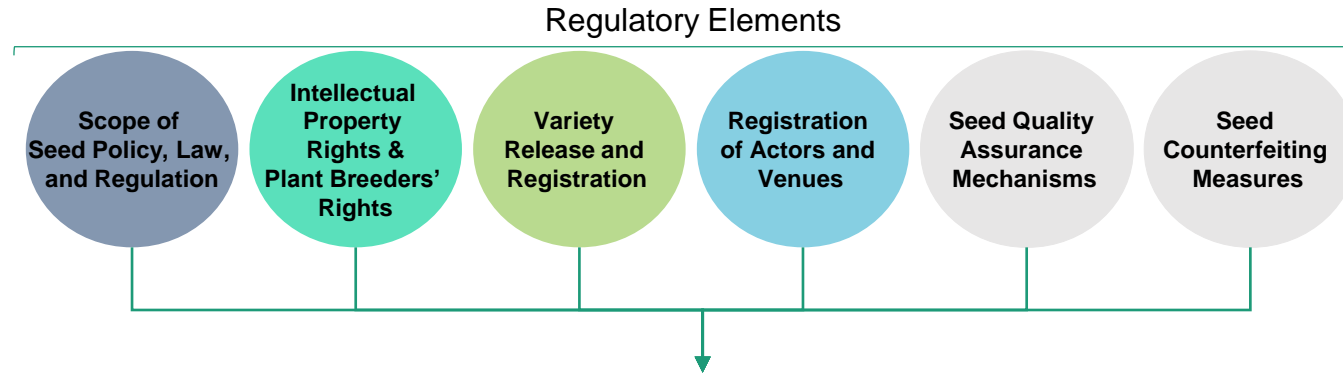
## ▣ Regulatory Implementation Dimensions

- ▣ Efficiency (time, cost, and number of steps)
- ▣ Regulatory Preconditions ("gateways" to move from one regulatory process to another; common in ex ante systems)
- ▣ Engagement of private sector and civil society
- ▣ Effectiveness (alignment with policy goals)

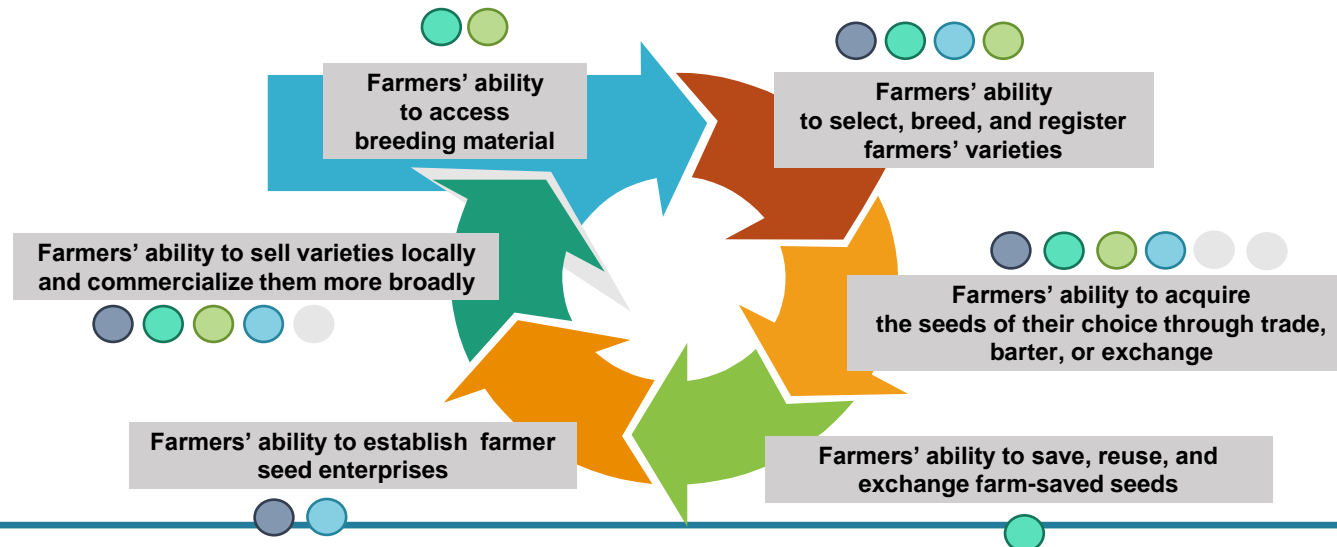
Source: New Markets Lab, *Approach to Legal and Regulatory Reform*, 2019, available at <https://www.newmarketslab.org/about>

# STUDY AREA #1: EXTENDING MARKET FRONTIERS

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How they bridge the gap between the formal and informal sectors



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# STUDY AREA #1: EXTENDING MARKET FRONTIERS

**1.1 Registration of Seed Actors and Venues (impacts farmers' ability to select, acquire, and sell seeds of their choice and ability to establish farmers' enterprises)**

**1.1.1 Comprehensive Registration**

**1.1.2 Differentiated Registration**

**1.1.3 Flexible Registration with Exemptions**

**1.2 Flexible Approaches to Seed Variety Registration (impacts farmers' ability to select, acquire, and sell seeds of their choice)**

**1.3 Flexible Approaches to Plant Variety Protection (impacts farmers' ability to select, acquire, sell, and save seeds, as well as ability to access breeding material)**

# 1.1 REGISTRATION OF SEED ACTORS & VENUES

## 1.1.1 Comprehensive Registration

- ❑ *Strict regulatory approaches that require registration of all actors; small-scale farmers cannot store, share, or commercialize other farmers' seeds if not registered*
  - ❑ **Colombia:** Registration required for all actors in the seed system

## 1.1.2 Differentiated Registration

- ❑ *Differentiated regulatory approaches, which establish different requirements for formal and informal actors, can result in extended access to seed systems, while maintaining quality standards and registration*
- ❑ *Still may impose restrictions on registration of actors, which may include limitations on venues or crop varieties that can be traded by informal actors*
  - ❑ **India:** Case Study

## 1.1.3 Flexible Registration

- ❑ *Registration required for all stakeholders, but exemptions exist*
  - ❑ **Peru:** Exception from registration for actors involved in the production, exchange, and storage of traditional varieties
  - ❑ **Tanzania:** Farmers selling QDS seed exempted

# CASE STUDY: INDIA'S DIFFERENTIATED APPROACH

- ❑ India has adopted a regulatory approach for registration of actors that differentiates between formal and informal actors. The Indian Ministry of Agriculture and Farmers' Welfare regulates the production, distribution, and sale of varieties in the formal seed sector, while the informal sector is regulated under the National Seeds Policy, 2002.
- ❑ Seed dealers (sellers, importers, exporters) are required to register under the Seeds Control Order (1983) and are also required to comply with the Seeds Act (1966), and the New Policy on Seeds Development (1988).
- ❑ India's National Seed Policy exempts farmers from compulsory registration and allows them to produce and sell seed varieties freely, with the limitation that they cannot sell any seed under a brand name.
- ❑ New Seeds Bill (not yet enacted) includes provisions allowing farmers to sell their seed on their own premises or in the local market, provided that the seed is not branded
- ❑ *This regulatory framework adapts to the reality of actors in the seed system*



India – Farmers selling their varieties in the market

Source: <https://www.ipppmedia.com/en/business/local-pigeon-pea-pulses-farmers-secure-market-indian-b2b-road>

# CASE STUDY: ORGANIZED SEED GROUPS

Organized seed groups can be one way to offset the costs of individual dealer registration and build trust surrounding seed sales in rural areas. These may include seed villages, seed clubs, or production centers that are trusted sellers of quality seed.

- **Vietnam's Seed Club in the Mekong Delta:** Seed clubs are common in Vietnam and have helped smaller farmers secure market presence. Vietnam's seed clubs are typically supported by local government agriculture extension officers, seed centers, and research institutes.
- **Myanmar's Seed Village Scheme** (Myanmar National Seeds Policy, 2016) is another example of the role that organized seed groups can play in a formally regulated system.



Source: SEARICE. 2019. *Securing the Local Seed Systems: The Journey of Farmers' Seed Clubs in Vietnam*. Southeast Asia Regional Initiatives for Community Empowerment.

## 1.2 FLEXIBLE APPROACHES TO SEED VARIETY REGISTRATION

- ▣ Flexibility exists for registering farmers' and landrace varieties (Laos, Nepal, Peru, Malaysia, and India)(See Recha et al., 2018; Visser, 2015; FAO, 2018; NML and SFSA, 2018)
- ▣ Differentiated seed registries (Peru, Brazil, Benin, France, Italy), with different testing requirements (NML and SFSA, 2018); in Benin, landraces are only subject to VCU testing (de Jonge et al., 2019).
- ▣ Variety registration and release can be formally regulated at the national level, but more flexible approaches may be applicable at the subnational level (Laos' national regulations are rigorous for the release of new varieties, excluding traditional crops, but procedures at the provincial level are more flexible and allow for the provincial release of traditional varieties and their commercialization in provinces.)
- ▣ Regional Harmonization and recognition of informal seed systems. (e.g. SADC provides for registration of landraces)

## 1.3 FLEXIBLE APPROACHES TO PLANT VARIETY PROTECTION

Protection and recognition of existing varieties, farmers' communities' varieties, landraces, local varieties, and traditional varieties (e.g. India, Peru, Thailand, Ethiopia, and Vietnam) (See Oxfam, 2018; NML and SFSA, 2019; Visser et al., 2019).

### CASE STUDY: PERU'S PROTECTION OF TRADITIONAL KNOWLEDGE



Farmers collecting traditional crops in Peru

Source: <https://www.panoramas.pitt.edu/health-and-society/meet-%E2%80%98potato-guardians%E2%80%99-working-peru%E2%80%99s-highlands-promote-crop-diversity-face>; <https://www.aracari.com/blog/stories/a-guide-to-peruvian-potatoes/>.

- Protection for traditional knowledge is incorporated into Peru's IP system and Peru's anticorruption system
- Farmers' organizations can apply for PVP, but varieties must still meet the novelty and DUS requirements

# STUDY AREA #1: EXTENDING MARKET FRONTIERS

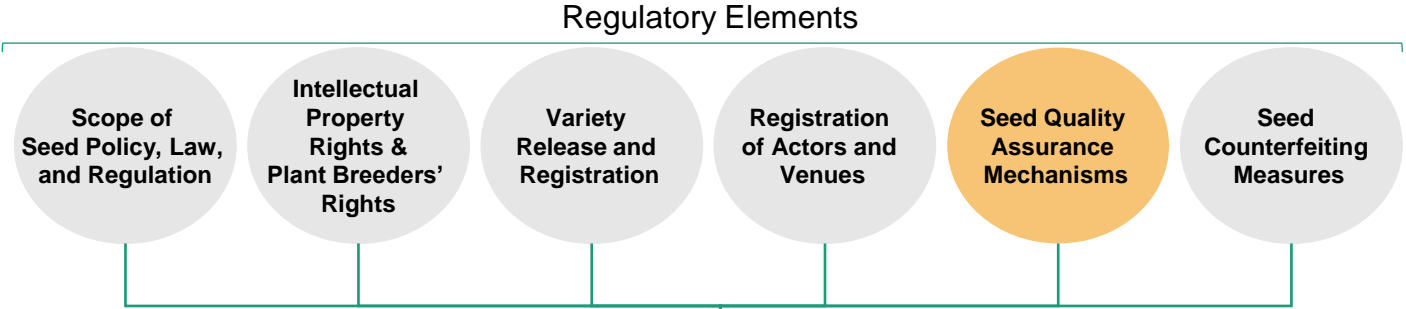
## LESSONS LEARNED

- Examples illustrate that flexibility can be built into a legal and regulatory system to expand crop and variety choices and opportunities for farmers
- These exist to varying degrees across registration of actors (India, Peru, Kenya), registration of varieties (Laos, Brazil, Benin), and plant variety protection (India, Peru)
- Legal recognition of community and farmers' associations can integrate informal actors into the system
- More flexible regulatory approaches can be adopted at the sub-national level, particularly when there is some autonomy from the national government
- Good evidence exists on flexible design approaches, but little exists with respect to implementation

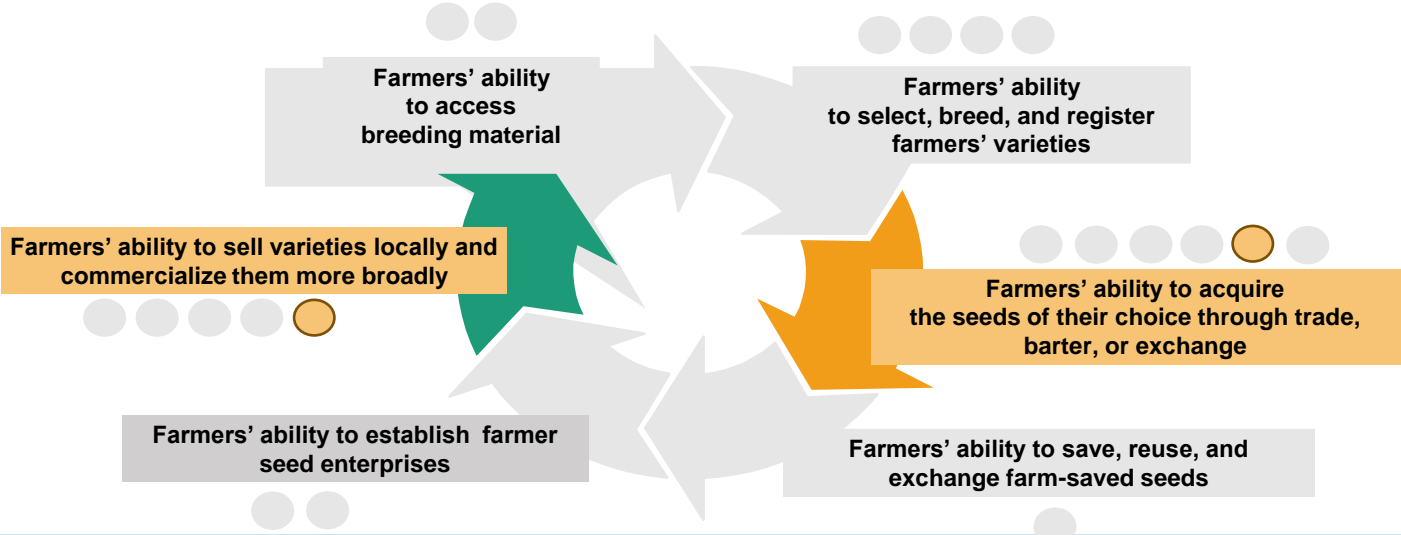
STUDY AREA # 2: LIBERALIZING SEED  
QUALITY CONTROL MECHANISMS



# STUDY AREA #2: LIBERALIZING SEED QUALITY CONTROL MECHANISMS



How they bridge the gap between the formal and informal sectors



*Source: © 2020 Kuhlmann, Dey, Garces Escobar, and Abregu, “regulatory elements”*  
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# REGULATORY APPROACHES TO QUALITY CONTROL

- Impacts farmers' ability to acquire and sell seeds of their choice
- Mandatory Certification
  - Contingent on variety and actors' registration (regulatory preconditions)
  - Relies upon advanced regulatory environment and appropriate infrastructure
  - Examples: Uganda, Rwanda, etc.
- Mandatory Certification with Flexibility
  - Can include third-party seed certification (e.g., Peru); private seed inspectors and labs (e.g., Zambia, Zimbabwe, and Kenya for inspectors; Afghanistan for labs)
  - Seed clubs and associations have been formally recognized and can sell seeds at the local level under certain conditions (e.g. Vietnam and Zimbabwe, where Zaka Association registered as a certifying authority)

# REGULATORY APPROACHES TO QUALITY CONTROL

- Quality Declared Seed (QDS)
  - Can be used as a more flexible alternative for quality assurance, especially for local and farmers' varieties
  - Often limited to specific regions or crops
  - Examples: Tanzania, Uganda, Madagascar, Peru, and Guatemala (e.g. MASFRIJOL)
- Truth-in-Labeling and Self-Certification
  - Relies on seed producer self-regulation and adherence to minimum quality standards
  - Examples: South Africa, India (mixed system), and Nepal (mixed system)

# CASE STUDY: INDIA MIXED SYSTEM

- Several approaches to quality control can co-exist within a national system, as India's system illustrates
- India does maintain formal certification, and certified seeds must meet ISTA and OECD quality assurance requirements
- Certified seed must be labeled, but all labeled seed need not be certified
- Truthfully-labeled seed can be produced and sold within India by private entities with recognized laboratory facilities; priced lower than certified seed
- Self-regulation based on minimum standards is also part of India's system
- Small producers use certification system on a voluntary basis, reducing costs related to formal seed certification

Certified seeds	<p>A. Progeny of foundation seed.</p> <p>B. It is produced by registered seed growers under supervision of seed certifying agencies.</p> <p>C. Isolation distance, genetic and physical impurities are kept under considerations.</p> <p>D. Purity percent standards vary from crop to crop.</p> <p>E. Seed certification officer can intervene to ensure purity.</p>	15 x 7.5 cm	Azure blue
Truthfully labeled seeds	<p>A. The certification mentioning the variety and the purity index.</p> <p>B. Labeling is compulsory for both notified and released variety.</p> <p>C. Seeds must have gone through a seed physical purity test, viability test and germination test.</p> <p>D. Intervention of seed certification officer is not needed.</p> <p>E. Seed inspector can judge seeds himself</p>	15 x 10 cm	Opal green

## Labels in India

Source: Hortipedia India, 2018,  
<https://www.hortipediaindia.co.in/2018/07/seed-tag-colour.html>

# CASE STUDY: NEPAL SEED CERTIFICATION & TRUTHFUL LABELLING

- ▣ Nepal's Seed Rules admit a blend of seed quality control mechanisms, including both seed certification and truthful labelling for all seed classes (breeder seed, foundation seed, certified seed, and improved seed)
- ▣ Seed certification is voluntary and is carried out by authorized agencies
- ▣ For seed that has not been certified, truthful labelling becomes a compulsory requirement and is carried out by seed producers
- ▣ While quality assurance under seed certification is the responsibility of Nepal's certification agency, for truthful labeling this responsibility lies with the producer

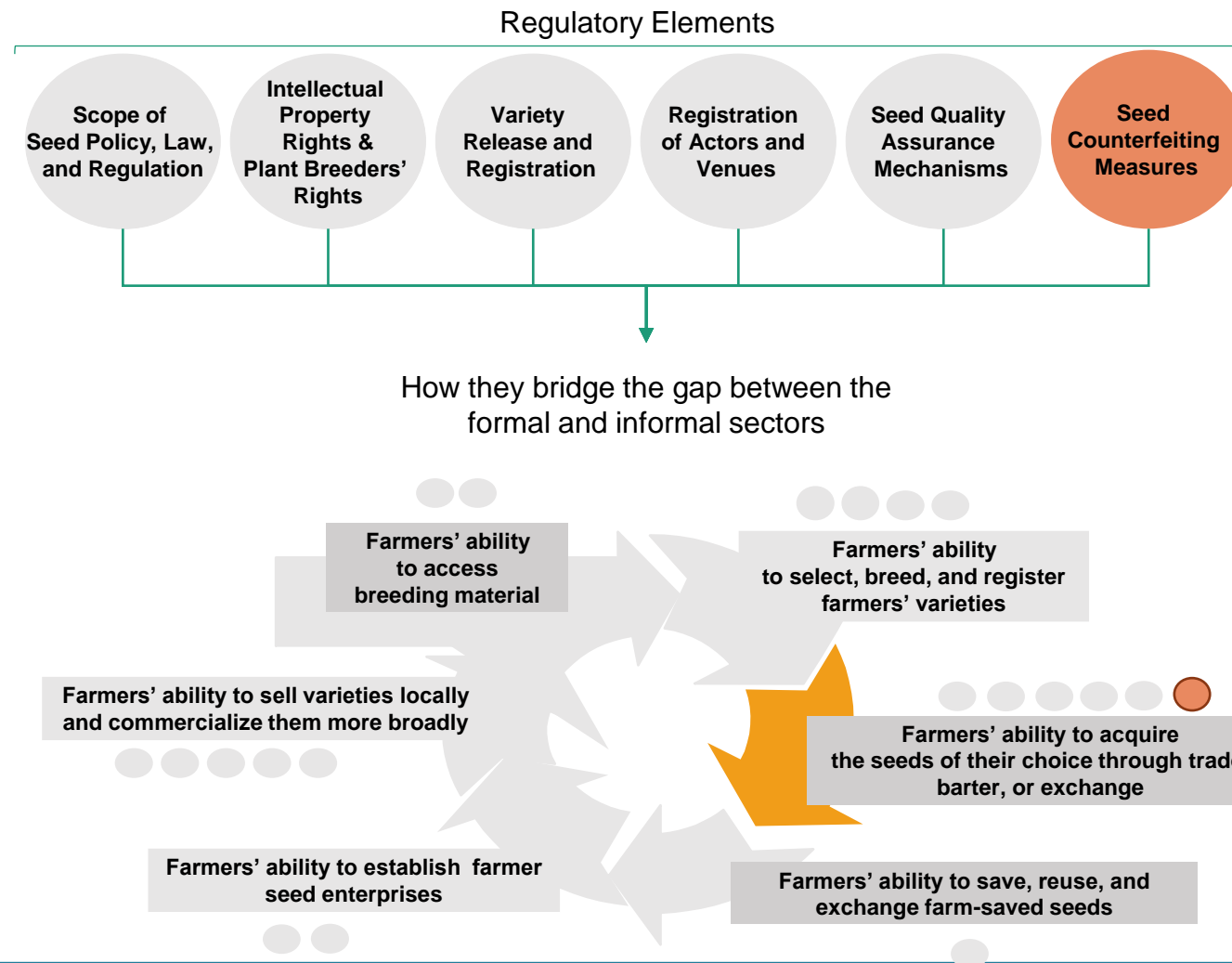
Element	Seed Certification	Truthful Labelling
<b>Type of seed</b>	Breeder seed, foundation seed, certified seed, improved seed	Breeder seed, source seed, label seed, improved seed
<b>Mandatory</b>	Voluntary	Compulsory if certification is not done
<b>Who does the certification?</b>	Authorized agencies (Seed Quality Control Centre (SQCC) and Regional Seed Testing Laboratory)	Seed producers
<b>Procedure to follow</b>	Procedure set through regulations; inflexible	Flexible procedure; producers can allocate available time to monitor quality
<b>Who is responsible?</b>	Certification agency is responsible.	Producers are responsible

## STUDY AREA #2: LIBERALIZING SEED QUALITY CONTROL MECHANISMS - LESSONS LEARNED

- Flexible quality assurance systems exist in some legal and regulatory systems to enable smallholders to purchase and sell farmers', landrace, and traditional varieties, even if within a more limited market
- Vietnam's system is particularly interesting, because the seed clubs (and guarantee system by local government authorities) have enabled small farmers to sell small volumes of non-certified seed within local boundaries; some seed club varieties have also been formally certified (e.g. HD1)
- Because some of these systems are still new in many cases (e.g. QDS in Tanzania and Uganda), their full impact cannot yet be assessed

# STUDY AREA # 3: ADDRESSING SEED COUNTERFEITING

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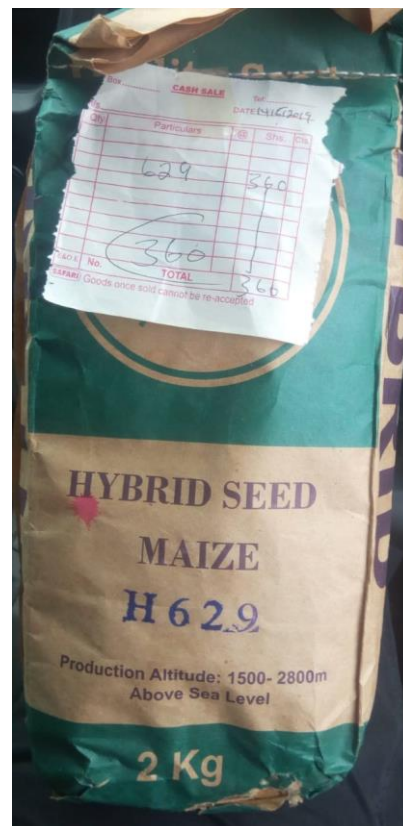


# ANTI-COUNTERFEITING REGULATORY APPROACHES

- ❑ Impacts farmers ability to acquire seeds of their choice
- ❑ Regulatory Approaches
  - ❑ Market based practices
    - ❑ End-user authentication (scratch-off label, holograms, pin codes)
    - ❑ E-tag system (with GPS traceability)
  - ❑ Companies' practices
    - ❑ Building local import facilities and distribution centers to have direct access to seed marketing channels
    - ❑ Packaging and labeling innovation
  - ❑ Enforcement measures
    - ❑ Penalties and punitive measures
    - ❑ Awareness campaigns
    - ❑ Consumer protection rules

# CASE STUDY: KENYA SCRATCH-OFF LABEL SYSTEM

- ❑ E-tag system through a scratch-off label that allows farmers to verify each batch through mobile phone
- ❑ Farmers receive verification code issued by public authorities
- ❑ Aspects of Kenya's system that make possible:
  - ❑ Clear standards for packaging and labeling
  - ❑ IT infrastructure
  - ❑ Wide use of mobile phones
- ❑ Challenges
  - ❑ Tailored to certain crops (e.g. maize)



Source: Pictures provided by Duncan Onduru during expert consultations

## CASE STUDY: DYED SEEDS



Source: Pictures provided by Duncan Onduru during expert consultations

## STUDY AREA # 3: ADDRESSING SEED COUNTERFEITING LESSONS LEARNED

- ❑ Innovative anti-counterfeiting measures exist and are still being rolled out
- ❑ Measures that integrate multiple aspects of the supply chain seem to more effective (packaging, repackaging, storage, and labeling)
- ❑ A robust consumer protection system that is accessible (realistic costs) and available, with appropriate resources and legal processes, can be an important anti-counterfeiting tool for farmers and consumers

# GUIDING QUESTIONS FOR OPEN DISCUSSION

- As a community, how can we help shape flexible regulatory design, open up practical space within existing systems to increase farmers' choices and preserve biodiversity?
  - Could separate regulatory approaches be established for registering farmers' varieties, including separate testing, fee structures, timing?
  - How could quality assurance systems be brought closer to farmers?
  - Do you know of any examples of use of consumer protection rules to protect farmers from counterfeit seed?
- How do national, sub-national, and local governments play a role?
- How can more flexible approaches be best adapted to local needs?
- How should we disseminate the findings from this study?
- How can we create effective tools and platforms to foster south-south learning?

**THANK YOU!**



***Katrin Kuhlmann*** is President and Founder of the New Markets Lab and a Visiting Professor at Georgetown University Law Center. Her areas of expertise include law and development, comparative economic law, agricultural regulation and trade corridors, regional trade harmonization, and international trade and development. Professor Kuhlmann is also a Senior Associate with the Global Food Security Project of the Center for Strategic and International Studies (CSIS) and a member of the Trade Advisory Committee on Africa at the Office of the U.S. Trade Representative (USTR). Previously, she was a Lecturer on Law at Harvard Law School; Senior Fellow and Director at the Aspen Institute; Director at USTR; and international lawyer in private practice. J.D. Harvard Law School; BA Creighton University; Fulbright Scholar 1992.



***Dr. Bhramar Dey*** (Senior Technical Advisor, S34D CRS) brings a unique blend of project design, management, and analytical skills focusing on country-led interventions (often through negotiations with governments) in data, policy, monitoring and evaluation, and agricultural input systems. She has over 15 years of experience in data and regulatory reform analyses, and designing, managing large client and stakeholder-oriented projects. Prior to joining CRS, Dr. Dey worked at the Bill and Melinda Gates Foundation (BMGF) - Agriculture initiative. Passionate about turning data into information, Dr. Dey focuses on institution strengthening, and bridging gaps between evidence and impact. Bhramar holds a Ph.D. in Applied Economics from Clark University.



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