

Globalization of India's Crop Improvement Research

PPP Possibilities

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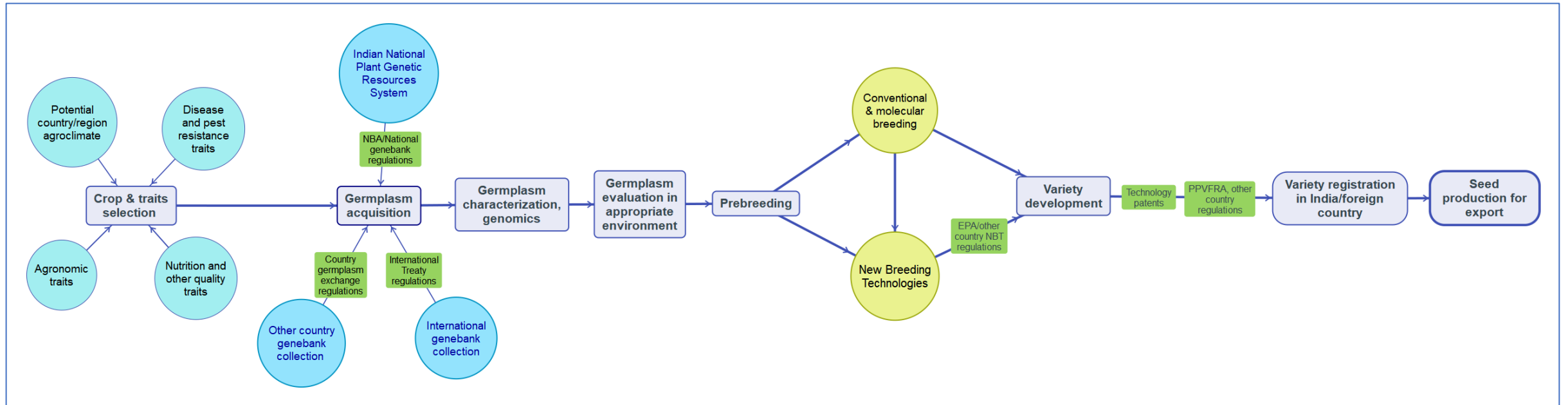
Globalizing India's Crop Improvement Research – Conference takeaway

- Federation of the Seed Industry of India (FSII) vision to capture 10 per cent share of global seed totaling \$14 billion
- Development of new crops and new varieties suited for global markets has been identified as the priority strategy
- Public and private sector developments in crop improvement and varieties of export potential enumerated

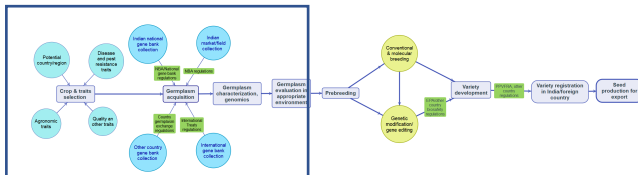
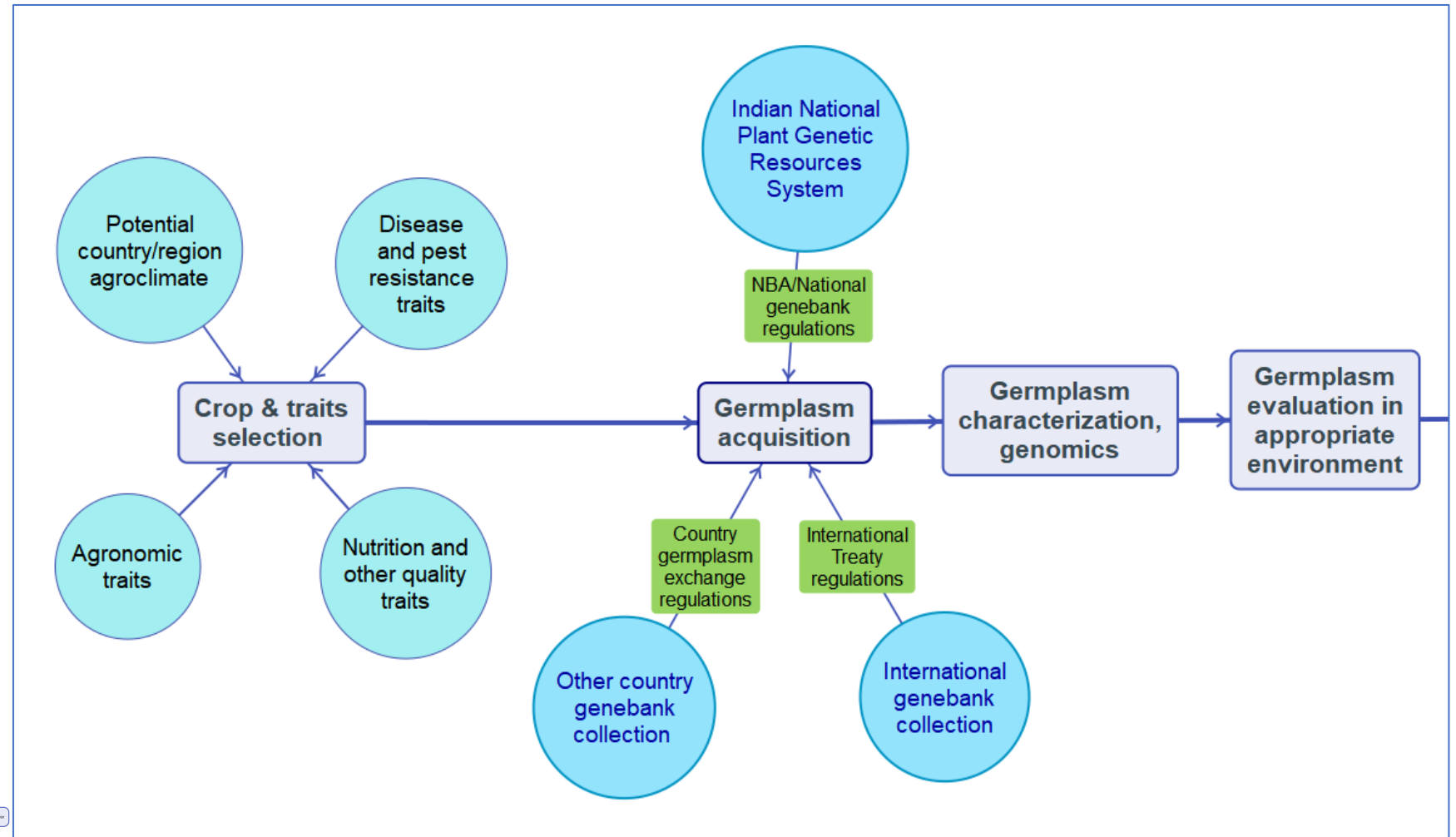
Breeding varieties for export

- Research and development
 - **Identification** of potential export regions, crops, traits, germplasm sources
 - **Germplasm acquisition**, characterization, and evaluation
 - **Prebreeding and breeding** adopting conventional and New Breeding Technologies as required
- Commercial seed production
- Supply chain integrity – traceability modules
- Regulatory compliance related to germplasm access and benefit sharing, variety protection, technology patents

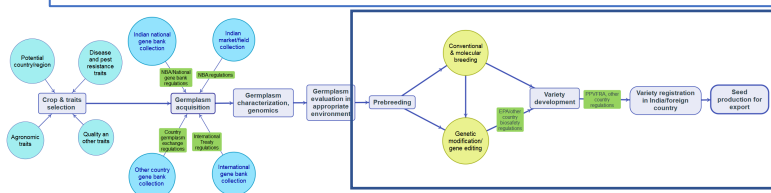
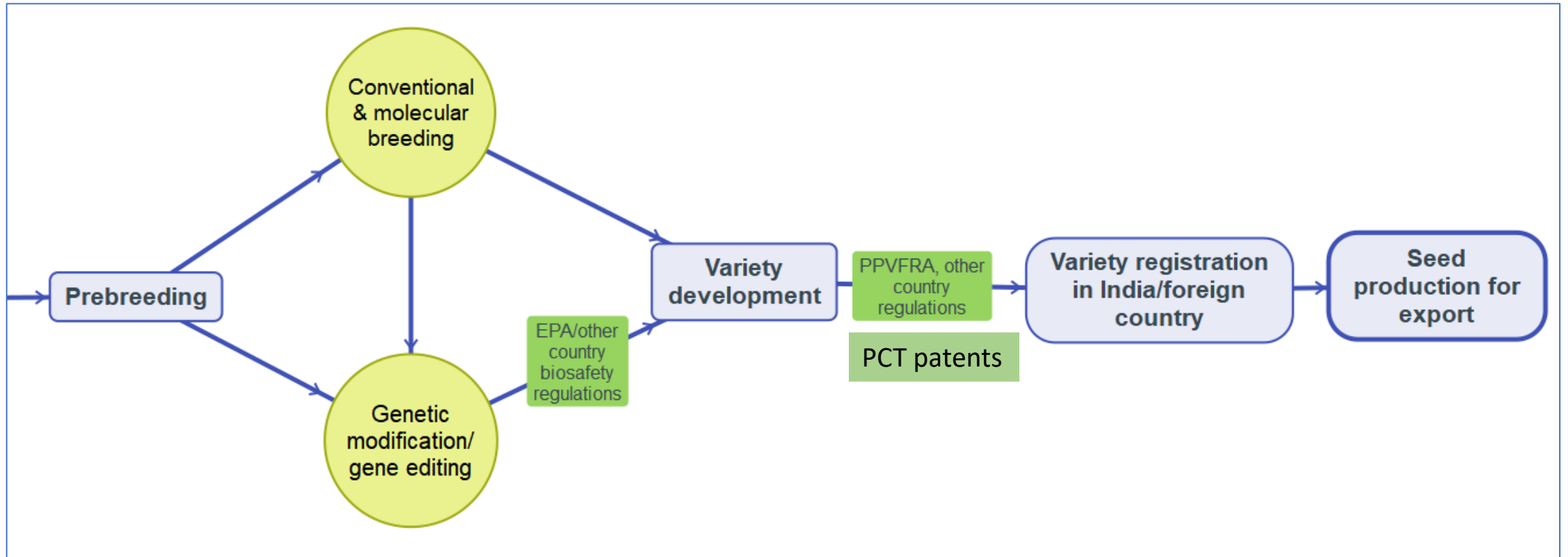
Scheme for development of varieties for export



Scheme for development of varieties for export - I



Scheme for development of varieties for export - II



Need for partnerships – Public-Private, Private-Private

- Number and diversity of research, development and regulatory activities involved and, hence, the resources required
- Need to be globally competitive in R&D - Time in variety development is reducing and the resultant short life cycle of varieties
- Need to be globally competitive in marketing

Comparative advantages of public sector vis-à-vis private sector

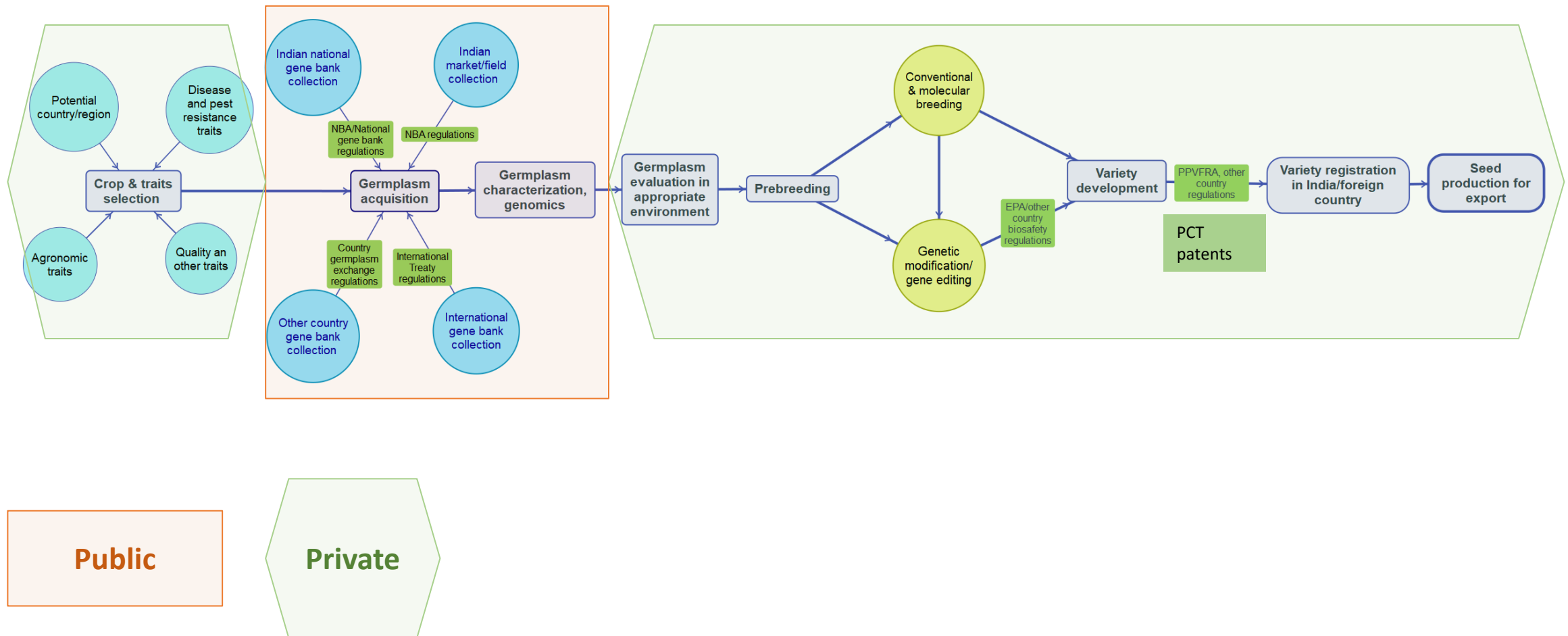
- Public

- Public sector including NARS, CSIR, DBT and other science institutes and universities, constitute a vast human resource in diverse fields many of which are of direct relevance to the seed sector
- Large infrastructure and facilities for technology refinement prior to commercialization. Technology parks, hubs etc.
- World's second-largest collection of germplasm

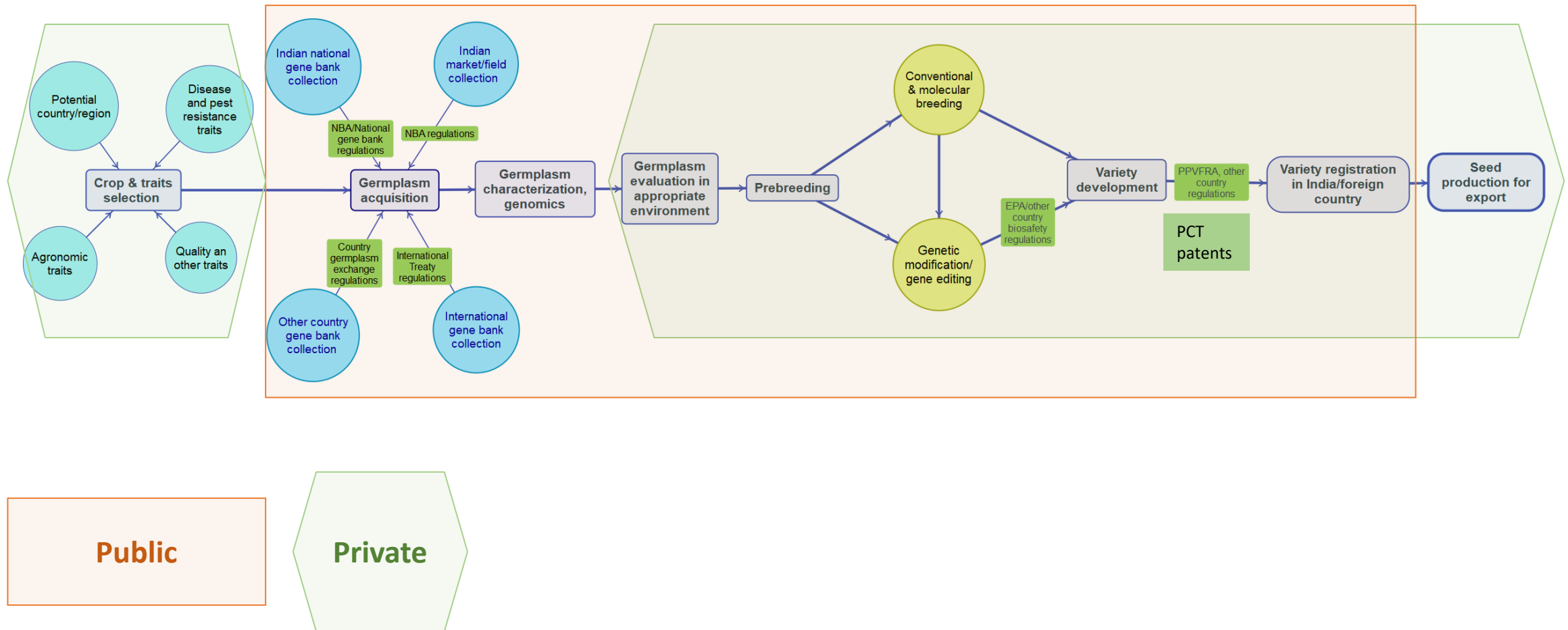
- Private

- Sharp focus on set goals
- Global market dealings and expertise
- Substantial achievements in NBT commercialization, international partnerships

Need-based choice and roles of partners: separate activities for each partner



Need-based choice and role of partners: Several joint activities – sharing of fields, labs, personnel



Facilitating PPP

- Work plan with clear allocation of responsibilities
- Level playing field for all parties
- Well-defined business rules and problem-resolution mechanism
- Fair sharing of outputs and outcomes
- Transparency and trust
- Delegation of powers to take project-related decisions at the local level
- A high-level committee for negotiating project-related patents – “Patent thickets.” CRISPR plants related patents in thousands
- Accreditation of partner organizations for M. Sc., Ph.D. programmes
- Support for project-related research and teaching programmes
- Need-based mobility of staff