PERU

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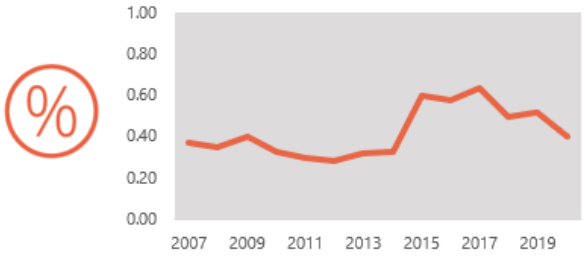
AGRICULTURAL RESEARCH SPENDING

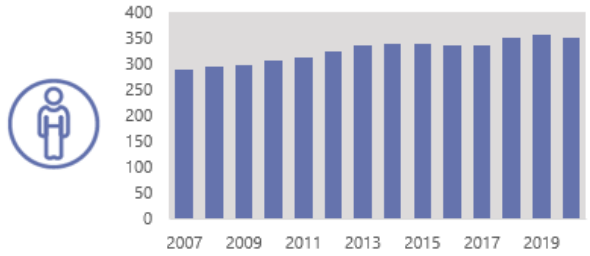
	PERU	ECUADOR	BOLIVIA	COSTA RICA
Million soles (2017 constant prices)	195.5			
Million PPP dollars (2017 constant prices)	111.7	19.6	65.1	38.1

SPENDING INTENSITY



	PERU	ECUADOR	BOLIVIA	COSTA RICA
Agricultural research spending as a % of agricultural GDP	0.40%	0.11%	0.50%	0.87%

AGRICULTURAL RESEARCHERS



	PERU	ECUADOR	BOLIVIA	COSTA RICA
Full-time equivalents	349.7	101.3	165.7	237.7

PNIA boosted agricultural R&D

After years of stagnant budgets, inadequate infrastructure, a constantly shifting policy environment, and high rates of staff turnover, the National Agricultural Innovation Program (PNIA) gave an important impulse to Peru's agricultural research system. Running from 2015 until 2021, PNIA strengthened the system through a combination of institutional reforms, staff training, and competitive research and innovation grants.

Temporary spending increase

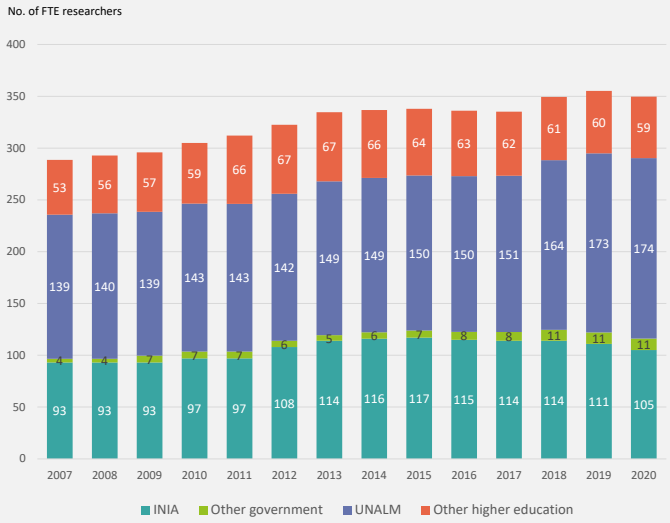
Peru's agricultural research spending doubled with the launch of PNIA. As a percentage of AgGDP, agricultural research spending rose from just 0.32 percent in 2014 to around 0.6 percent during 2015–2017. In more recent years, however, this research intensity ratio has slipped again towards 0.4 levels. It is important that the advances made during the PNIA years are not eroded in the absence of viable mechanism to sustain agricultural R&D and innovation on the long run.

Capacity challenges remain

Most of Peru's PhD-qualified agricultural researchers are over 60 years old, posing a significant problem for the future conduct and continuity of agricultural research. The country will need to recruit and train scientists without delay, and provide the necessary remuneration, working conditions, and incentives to maintain their commitment over time. A necessary first step is to reduce the salary gap between researchers employed at INIA and those at universities.

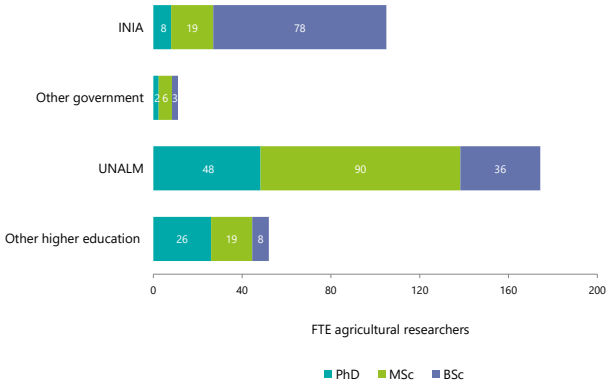
Institutional composition of agricultural research system

Peru stands out from most similarly sized countries in Latin America (and beyond) with its comparatively small national agricultural research institute. INIA employed 105 researchers in 2020, representing just 30 percent of the country's agricultural capacity that year. UNALM's research capacity is much larger, accounting for about half of the country's FTE agricultural researchers. While the higher education sector has gradually increased its agricultural R&D capacity over time, researcher numbers at government R&D agencies have stagnated.



Peru's agricultural researchers by qualification level

In 2020, a quarter of Peruvian agricultural researchers held PhD degrees; 39 percent was MSc-qualified; and 36 percent was trained to the BSc level. Overall, researchers at the universities hold considerably higher qualifications than those at INIA and the other government R&D agencies. While average qualification levels of university-based researchers improved substantially during 2010–2020, those at INIA deteriorated. INIA lacks the competitive salaries and benefits compared with the higher education sector, which are needed to attract, motivate, and retain well-qualified staff. Employing just 8 researchers with doctorate degrees and 19 with MSc degrees in 2020, INIA truly lacks the critical mass of highly qualified researchers needed to address the multidisciplinary challenges facing Peru's agricultural sector.



Peru's agricultural researchers broken down by gender

Peru still has a long way ahead to achieve true gender balance in the staffing of its agricultural research system. As of 2020, 28 percent of the country's agricultural researchers were women, which was only a fraction higher than the share recorded in 2013. UNALM and the other higher education agencies employed comparatively more female agricultural researchers than INIA and the other government R&D agencies.

By qualification level, 2020

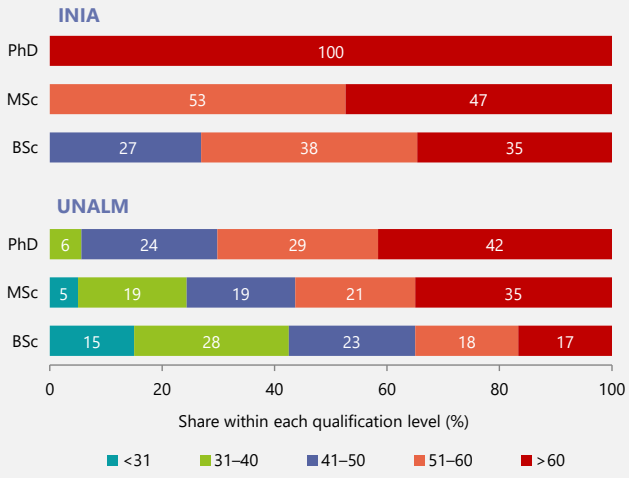
BSc **21%** MSc **34%** PhD **30%**

By institutional category, 2020

Government	**18%**
Higher education	**34%**

INIA's and UNALM's researchers broken down by qualification level and age bracket, 2020

As of 2020, all of INIA's PhD-qualified researchers and nearly half of those with MSc degrees were older than 60 and rapidly approaching retirement age. This makes the recruitment and/or training of the next generation of scientists an urgent priority. Although the average age of agricultural researchers at UNALM was lower, a substantial portion of the university's agricultural researchers with PhD and MSc degrees will be retiring in the coming years as well.



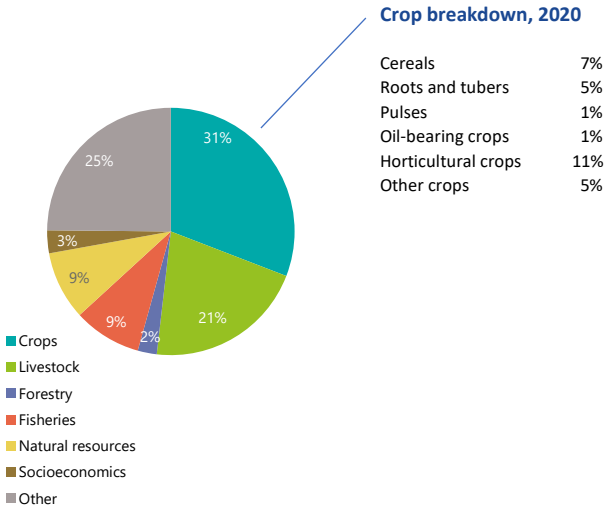
INIA's and UNALM's funding broken down by source

INIA and UNALM receive the bulk of their funding from the Peruvian government. Both agencies generate substantial complementary funding through the sale of goods and services. Donor and development bank funding plays an important role. In 2013, Peru's Ministry of Agrarian Development and Irrigation, the World Bank, and IDB agreed to create PNIA. The World Bank and IDB issued loans of USD 40 million each, while counterpart funding from the Peruvian government totaled USD 85.4 million. PNIA issued competitive multi-stakeholders grants to over 500 research projects during 2015–2018.

Note: UNALM's funding levels have been adjusted for the proportion of staff time spent on research as opposed to non-research activities.

Commodity focus of Peruvian agricultural researchers

As of 2020, roughly a third of Peruvian agricultural researchers concentrated their research on crops, 21 percent focused on livestock, and the remainder was focused on fisheries, natural resources, socioeconomics, forestry, and other areas. Peru's most researched crops include vegetables, potatoes, maize, and quinoa. The country's livestock research activities are relatively evenly spread across cattle, poultry, and pigs.



New crop varieties released by INIA, 2017–2021

During 2017–2021, INIA released 27 improved crop varieties, mostly potato, maize, wheat, beans, sweet potato, and quinoa varieties. Most of these new varieties offer higher yield and/or improved resistance to pests. All new varieties were granted a breeder's certificate from Peru's Register of Commercial Cultivars.

Variety name	Crop type	Year of release	Protection mechanism
INIA 326 - Shulay	Potato	2017	Registered
INIA 514 - Bellavista	Rice	2018	Registered
INIA 328 - Kulli	Potato	2018	Registered
INIA 327 - Puka Cancha	Potato	2018	Registered
INIA 329 - Bicentenario	Sweet potato	2019	Registered
INIA 622 - Chullpi Sara	Maize	2019	Registered
INIA 908 - Mellicera	Oats	2019	Registered
INIA 435 - Ayacuchano	Wheat	2019	Registered
INIA 436 - Huamanguino	Wheat	2019	Registered
INIA 330 - Wiñay	Potato	2019	Registered
INIA 437 - Roja del Norte	Quinoa	2019	Registered
INIA 515 - Capoteña	Rice	2020	Registered
INIA 331 - Bondadosa	Sweet potato	2020	Registered
INIA 439 - Costacen	Bean	2020	Registered
INIA 441 - Señor del Huerto	Quinoa	2020	Registered
INIA 624 - Killu Suk	Maize	2020	Registered
INIA 623 - Canchero	Maize	2020	Registered
INIA 438 - Acollina	Quinoa	2020	Registered
INIA 442 - La Frondosa	Kiwicha	2020	Registered
INIA 910 - Kumymarca	Ryegrass	2020	Registered
INIA 440 - K'anchareq	Wheat	2021	Registered
INIA 909 - Katekyl	Oats	2021	Registered
INIA 395 - Vitahuayo	Camu Camu	2021	Registered
INIA 443 - Antapampino	Wheat	2021	Registered
INIA 444 - Masacanchino	Bean	2021	Registered
INIA 608 - Allimasara	Maize	2021	Registered
INIA 332 - Perú Bicentenario	Potato	2021	Registered

Publication record of Peruvian agricultural researchers

While research conducted by INIA is mostly focused on releasing technologies and varieties that directly benefit farmers (see table to the left), the research undertaken by university-based agricultural researchers is typically of a more theoretical nature, speaking to academic debates. On average, UNALM-based agricultural researchers produce more than twice as many peer-reviewed publications than their colleagues at INIA.

Number of peer-reviewed publications per FTE researcher, 2017–2020 averages

	INIA	UNALM
Journal articles		
International	0.23	0.70
National	0.16	0.21
Books	0.02	0.00
Book chapters	0.00	0.03
Total	**0.41**	**0.95**

ASTI RESOURCES FOR PERU

This factsheet presents recent data on the agricultural research system of Peru, primarily focusing on key financial, human resource, institutional, and output indicators, while also highlighting relevant trends, challenges, and institutional changes. Additional resources are available at **www.asti.cgiar.org** and include:

- ASTI's **interactive country page** for Peru features national agricultural research investment and capacity data, a data exploration and download tool, as well as access to a variety of country publications.
- ASTI's **benchmarking tool** allows key agricultural research indicators to be ranked and compared across Latin American countries.
- ASTI's **data download tool** provides access to more in-depth ASTI datasets and graphs for Peru and many other countries.
- ASTI's **agency directory** provides an overview of agencies involved in agricultural research in Peru, along with their location and key agency-level indicators.

ASTI DATA PROCEDURES AND METHODOLOGY

The data underlying this factsheet were derived through detailed primary surveys from the country's principal agricultural R&D agencies. Data from smaller R&D agencies were drawn from secondary sources or were estimated.

Agricultural research includes research conducted by the government, higher education, and nonprofit sectors; research conducted by the private for-profit sector is excluded due to incomplete data coverage.

ASTI bases its calculations of human resource and financial data on full-time equivalent (FTE) researchers, which take into account the proportion of time staff actually spend on research compared with other (non-research) activities.

ASTI presents its financial data in 2017 local currencies and 2017 purchasing power parity (PPP) dollars. PPPs reflect the relative purchasing power of currencies more effectively than do standard exchange rates because they compare prices of a broader range of local—as opposed to internationally traded—goods and services.

ASTI estimates the higher education sector's research expenditures because it is not possible to isolate them from the sector's other expenditures.

Note that decimal rounding can cause totals to be one point higher or lower than the sum of their parts.

For more information on ASTI's data procedures and methodology, visit www.asti.cgiar.org/methodology.

ACRONYMS USED IN THIS FACTSHEET

ASTI	Agricultural Science and Technology Indicators
FTEs	full-time equivalent(s)
GDP	gross domestic product
IDB	Inter-American Development Bank
IFPRI	International Food Policy Research Institute
INIA	National Agricultural Innovation Institute
PNIA	National Agricultural Innovation Program
PPP	purchasing power parity (exchange rate)
R&D	research and development
UNALM	National Agricultural University La Molina

ABOUT ASTI

Working through collaborative alliances with numerous national and regional R&D agencies and international institutions, ASTI is a comprehensive and trusted source of information on agricultural R&D systems across the developing world. ASTI is facilitated by the International Food Policy Research Institute (IFPRI). INIA coordinated in-country data collection. For more information on ASTI, please visit www.asti.cgiar.org/about.

ASTI gratefully acknowledges participating agricultural R&D agencies for their contributions to the data collection and preparation of this country factsheet. They also thank the Inter-American Development Bank (IDB) for its generous support of ASTI's work in Latin America.

This country brief has been prepared as an ASTI output and has not been peer reviewed; any opinions are those of the authors and do not necessarily reflect the policies or opinions of IFPRI or IDB.