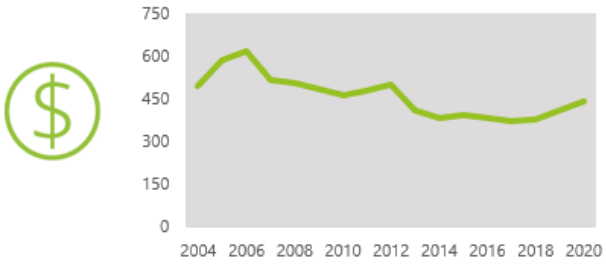
DOMINICAN REP.

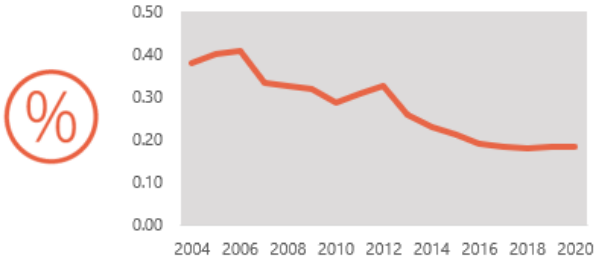
Gert-Jan Stads and Luis de los Santos

AGRICULTURAL RESEARCH SPENDING



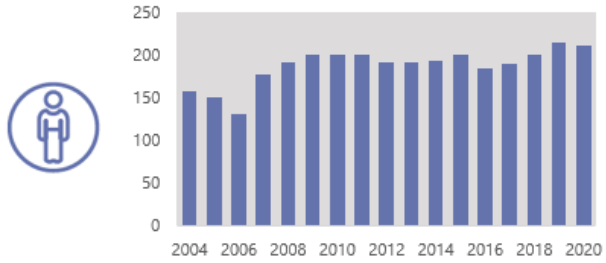
	DOM. REP.	COSTA RICA	HONDURAS	GUATEMALA
Million pesos (2017 constant prices)	441.8			
Million PPP dollars (2017 constant prices)	20.4	38.1	9.8	14.4

SPENDING INTENSITY



Agricultural research spending as a % of agricultural GDP	0.18%	0.87%	0.20%	0.10%

AGRICULTURAL RESEARCHERS



Full-time equivalents	211.2	237.7	109.1	154.3

Low agricultural R&D spending

The Dominican Republic's investment in agricultural R&D has been rather stagnant over the past decade (in inflation-adjusted terms). Measured against agricultural GDP, however, there has been a steady drop in investment levels. In 2020, the Dominican Republic spent just 0.18 percent of its agricultural GDP on agricultural R&D, representing among the lowest levels in Latin America and the Caribbean.

Human capacity challenges

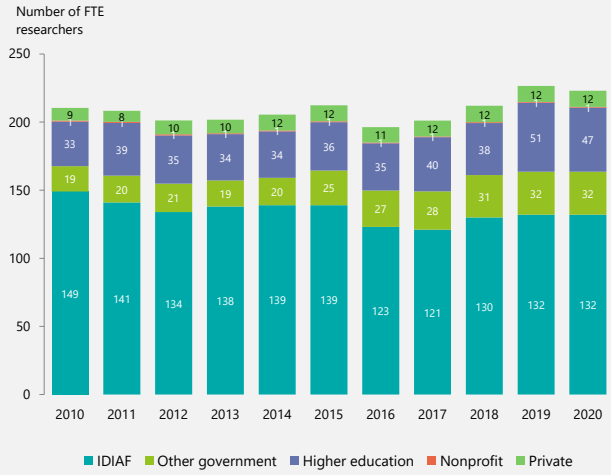
The Dominican Republic lacks a critical mass of PhD-qualified agricultural researchers. Many scientists with PhD degrees are currently in their sixties and fast approaching the mandatory retirement age. Recruiting and training the next generation of researchers is an urgent priority. However, low public-sector salaries and limited incentives are impeding factors to attracting, motivating, and retaining young talent.

Weak research ecosystem

Unlike their colleagues at most national agricultural research institutes across Latin America, a high share of IDIAF researchers hold dual appointments as professors or researchers at universities or the private sector. This situation discourages universities to create permanent positions for academic staff. It also impedes the fostering of a true agricultural R&D ecosystem with multiple independent actors that collaborate and compete on an equal footing.

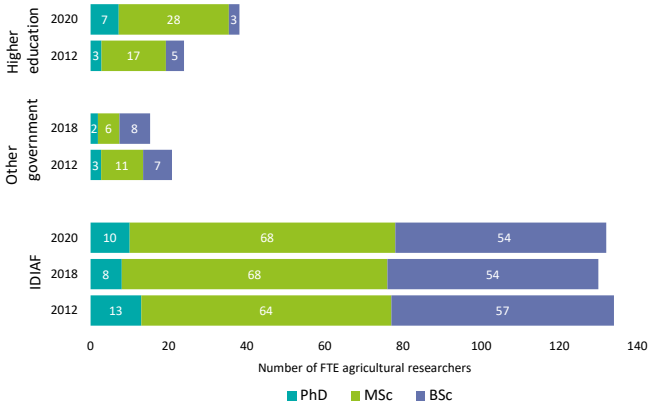
Institutional composition of agricultural research system

IDIAF is the Dominican Republic's principal agricultural research agency, accounting for close to 60 percent of the country's agricultural researchers in 2020. The involvement of other government agencies and universities in Dominican agricultural research has grown substantially over time. Private-sector involvement in R&D remains somewhat limited. In 2020, the private sector accounted for 5 percent of the country's agricultural R&D capacity.



Dominican agricultural researchers by qualification level

Ten percent of Dominican agricultural researchers hold PhD degrees; 55 percent are MSc-qualified; and 35 percent were trained to the BSc level. University-based agricultural researchers hold much higher average qualification levels than their colleagues based at IDIAF and the other government R&D agencies. While average qualifications of university-based agricultural researchers have progressively improved over time, those of researchers based at government agencies have not. Unless they can improve salary packages, working conditions, and other incentives, retaining and motivating staff will be an ongoing challenge for government R&D agencies.



Dominican agricultural researchers broken down by gender

In 2020, one-third of Dominican agricultural researchers were women, up from 24 percent in 2012. This nation-wide average masks considerable variation across agencies. While Universidad ISA achieved true gender balance, agencies like UASD and IDIAF still have a long way to go.

By qualification level, 2020

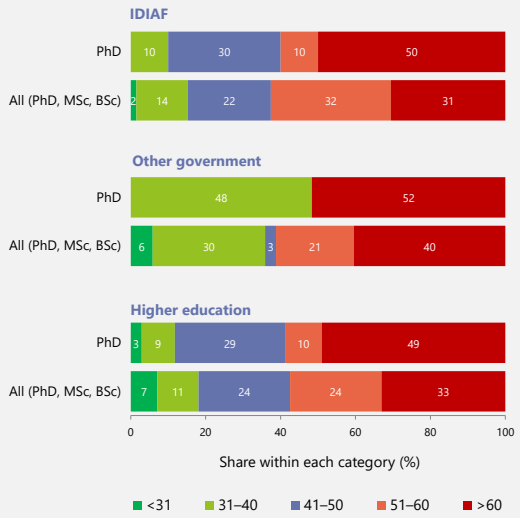
BSc **42%** MSc **26%** PhD **39%**

By main agricultural R&D agencies, 2020

IDIAF	**31%**
UASD	**28%**
Universidad ISA	**50%**

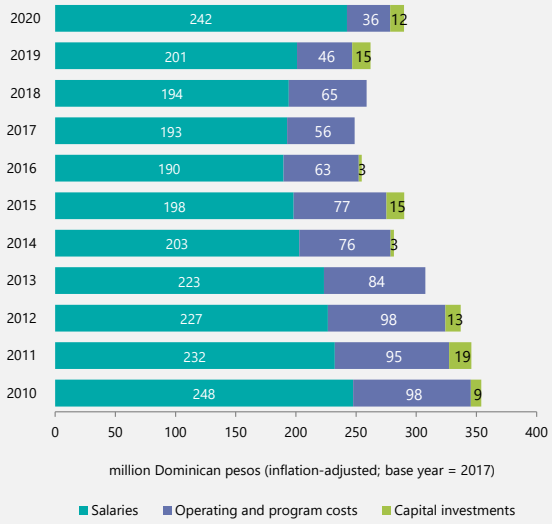
Dominican researchers by qualification level and age bracket

The Dominican agricultural research system is challenged with an aging pool of scientists. As of 2020, close to two-thirds of the country's agricultural researchers were in their fifties or sixties, and about half of those with PhD were older than 60 and approaching the mandatory retirement age. The recruitment and training of the next generation of scientists has therefore become a priority. It is important that measures are put in place to motivate and retain these younger scientists over time.



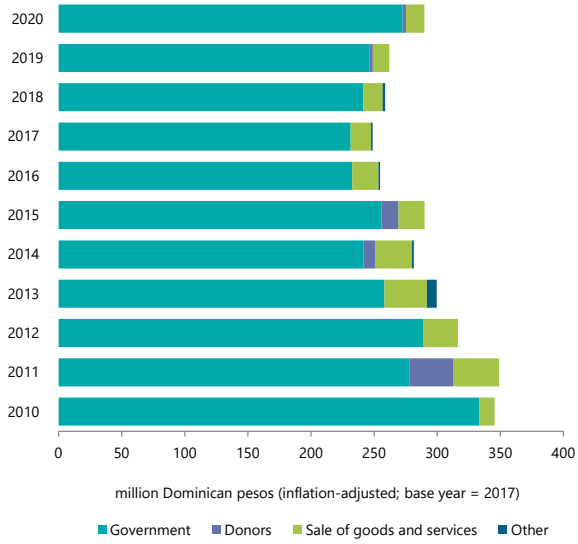
IDIAF's spending broken down by cost category

During 2010–2020, salary costs accounted for 73 percent of IDIAF's expenditures, operating and program costs for 25 percent, and capital investments for the remainder. In recent years, the institute spent progressively less on operating and program costs, while its salary bill augmented following staff recruitment. IDIAF will require higher and consistent levels of funding to support its daily operations, ensure the viability of its research activities, and enable necessary maintenance of and upgrades to its infrastructure and equipment.



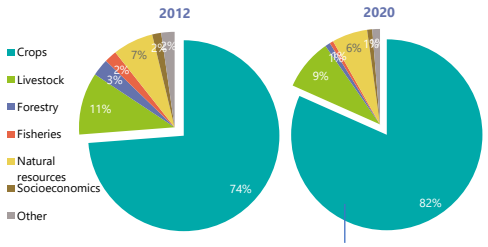
IDIAF's funding broken down by source

The central government and the Ministry of Higher Education, Science, and Technology provide the bulk of IDIAF's funding, mostly to support the institute's salary bill and operating costs. Internally generated resources through the sale of goods and services accounted for 7 percent of IDIAF's funding, and donor funding (notably from FONTAGRO and the government of South Korea) for 2 percent.



Commodity focus of Dominican agricultural researchers

Crop research dominates the agenda of most Dominican agricultural research agencies. In 2020, 82 percent of the country's agricultural researchers focused their research on crops, up from 74 percent eight years earlier. The most researched crops include beans, bananas, and fruits. Compared to many other countries in Latin America and the Caribbean, relatively little focus is given to non-crop areas.



Crop breakdown, 2020

Cereals	10%
Roots and tubers	10%
Pulses	14%
Oil-bearing crops	2%
Horticultural crops	25%
Other crops	20%

Publication record of Dominican agricultural researchers

Compared to many of their colleagues around the globe, Dominican agricultural researchers publish very little peer-reviewed articles, books, and book chapters. IDIAF researchers work mostly on releasing technologies and varieties that directly benefit farmers. During 2017–2020, its average number of peer-reviewed publications per researcher per year totaled only 0.11. Although the country's agricultural higher education agencies produced about three times more peer-reviewed publications per year than IDIAF, their publication record is still very low compared to many universities across Latin America and the Caribbean.

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

	IDIAF	UASD	ISA
Journal articles			
International	0.06	0.10	0.11
National	0.03	0.19	0.23
Books	0.02	0.00	0.00
Book chapters	0.00	0.00	0.00
Total	**0.11**	**0.29**	**0.34**

ASTI RESOURCES FOR THE DOMINICAN REPUBLIC

This factsheet presents recent data on the agricultural research system of the Dominican Republic, 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 the Dominican Republic 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 the Dominican Republic and many other countries.
- ASTI's **agency directory** provides an overview of agencies involved in agricultural research in the Dominican Republic, 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
FONTAGRO	Regional Fund for Agricultural Technology
FTEs	full-time equivalent(s)
GDP	gross domestic product
IDB	Inter-American Development Bank
IDIAF	Dominican Institute of Agricultural and Forestry Research
IFPRI	International Food Policy Research Institute
ISA	Higher Institute of Agriculture
PPP	purchasing power parity (exchange rate)
R&D	research and development
UASD	Autonomous University of Santo Domingo

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). 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.