



El Observatorio del Arroz:

Una plataforma de datos abiertos desde América Latina para el mundo.



Robert Andrade*, et al.

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13 de Junio , 2024

Panamá City, Panamá



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Foresight



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Market Intelligence





Motivación



“No ver el bosque por los árboles” *John Heywood, 1546*



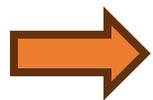
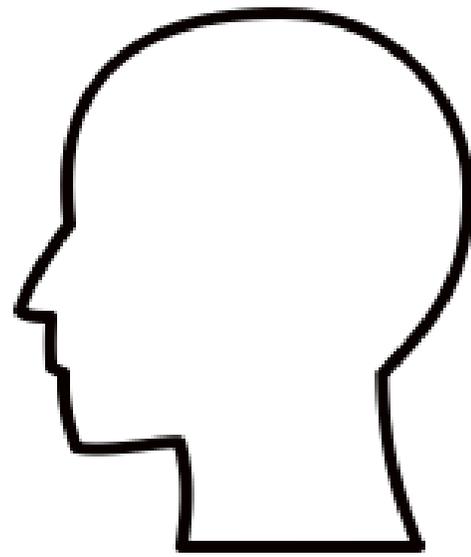
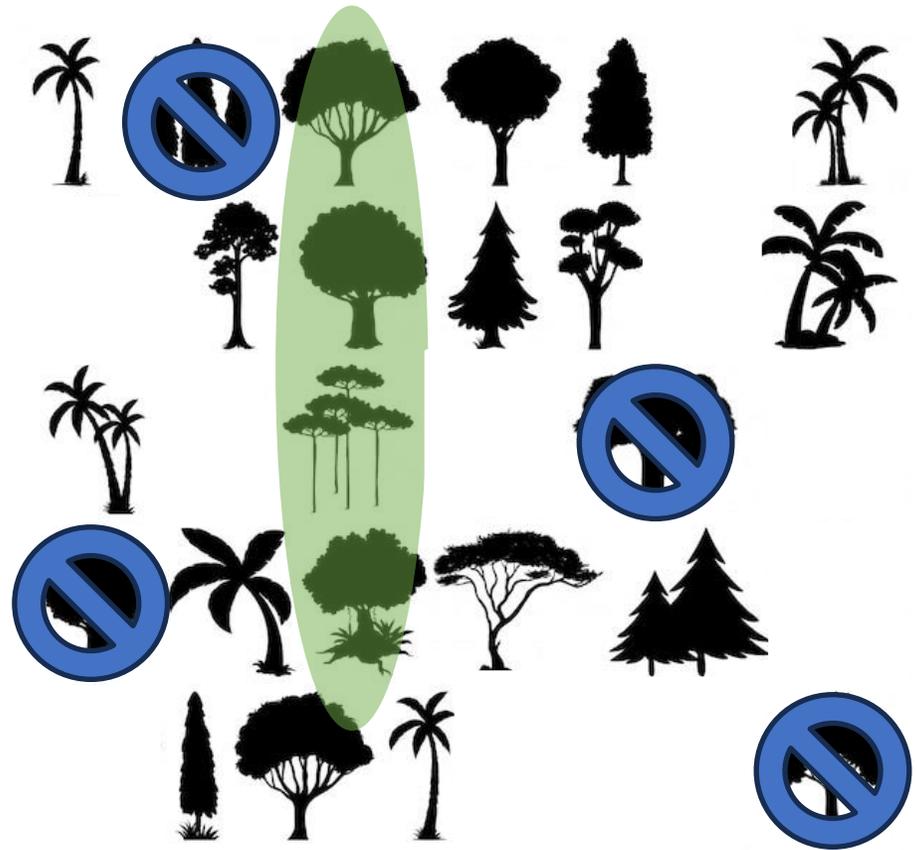
Adopta Bosque Panamá
Fuente: <https://adoptabosque.org/reforestation/>



The Smithsonian Tropical Research Institution Panama
Fuente: <https://www.dicyt.com/viewItem.php?itemId=35152>



“El conocimiento es poder” *Sir Francis Bacon, 1597*



Decisiones basadas en conocimiento



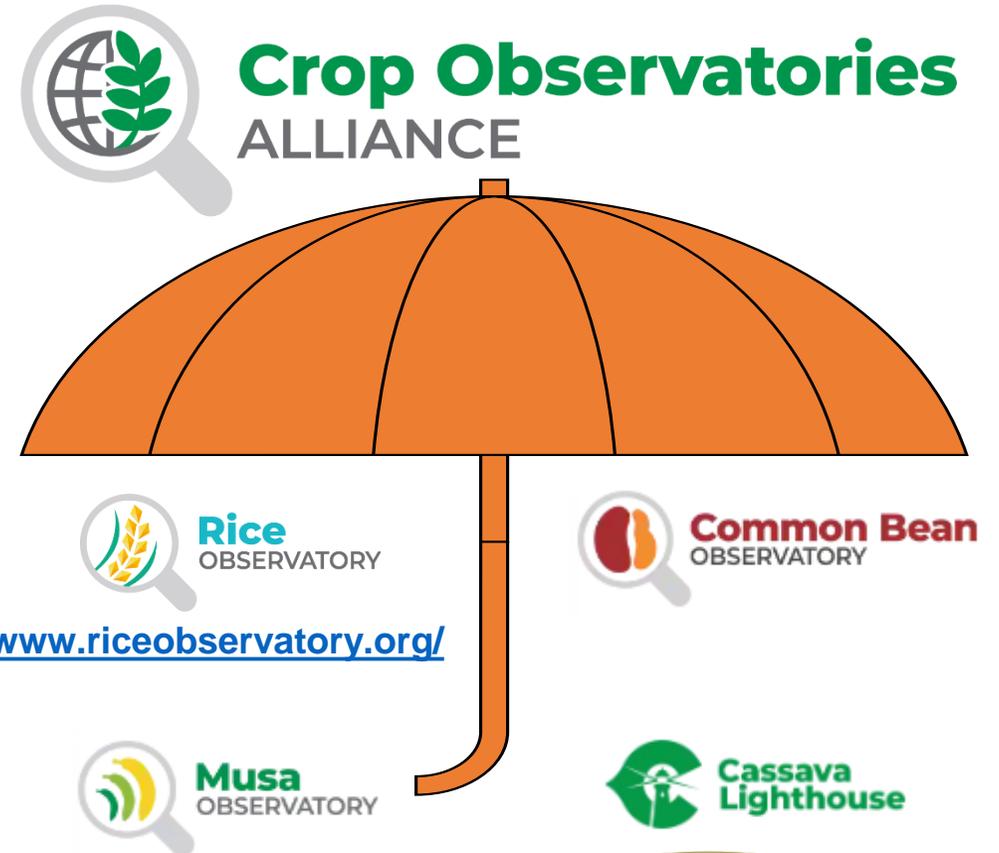


Logística, Estructura, y Navegación del Observatorio



Alianza de Observatorios de Cultivos - objetivo

- A nivel mundial, existe una **explosión en la generación de datos para la agricultura**. Con tal cantidad de datos disponibles, es esencial crear **soluciones que organicen, analicen y visualicen** estos datos para **tomar decisiones** basadas en conocimiento.
- La Alianza de Observatorios de Cultivos es una iniciativa que busca **armonizar grandes cantidades de datos** provenientes de diversas fuentes de acceso abierto o datos primarios para construir indicadores relevantes para la toma de decisiones.





Alianza de Observatorios de Cultivos – equipo y socios



- Carolina Gonzalez
- Robert Andrade

- Leroy Mwanzia
- Carolina Garcia



AfricaRice



CIP
INTERNATIONAL POTATO CENTER

Visualización y análisis de datos

- Punto focal:
 - Tatiana Rivera
- Equipo:
 - Maria del Mar Esponda

Manejo de Datos

- Punto focal:
 - Ricardo Pedreros
- Equipo:
 - Hans Nasner

Programación

- Punto focal:
 - Jose Daniel Vergara
- Equipo:
 - Esperanza Orozco



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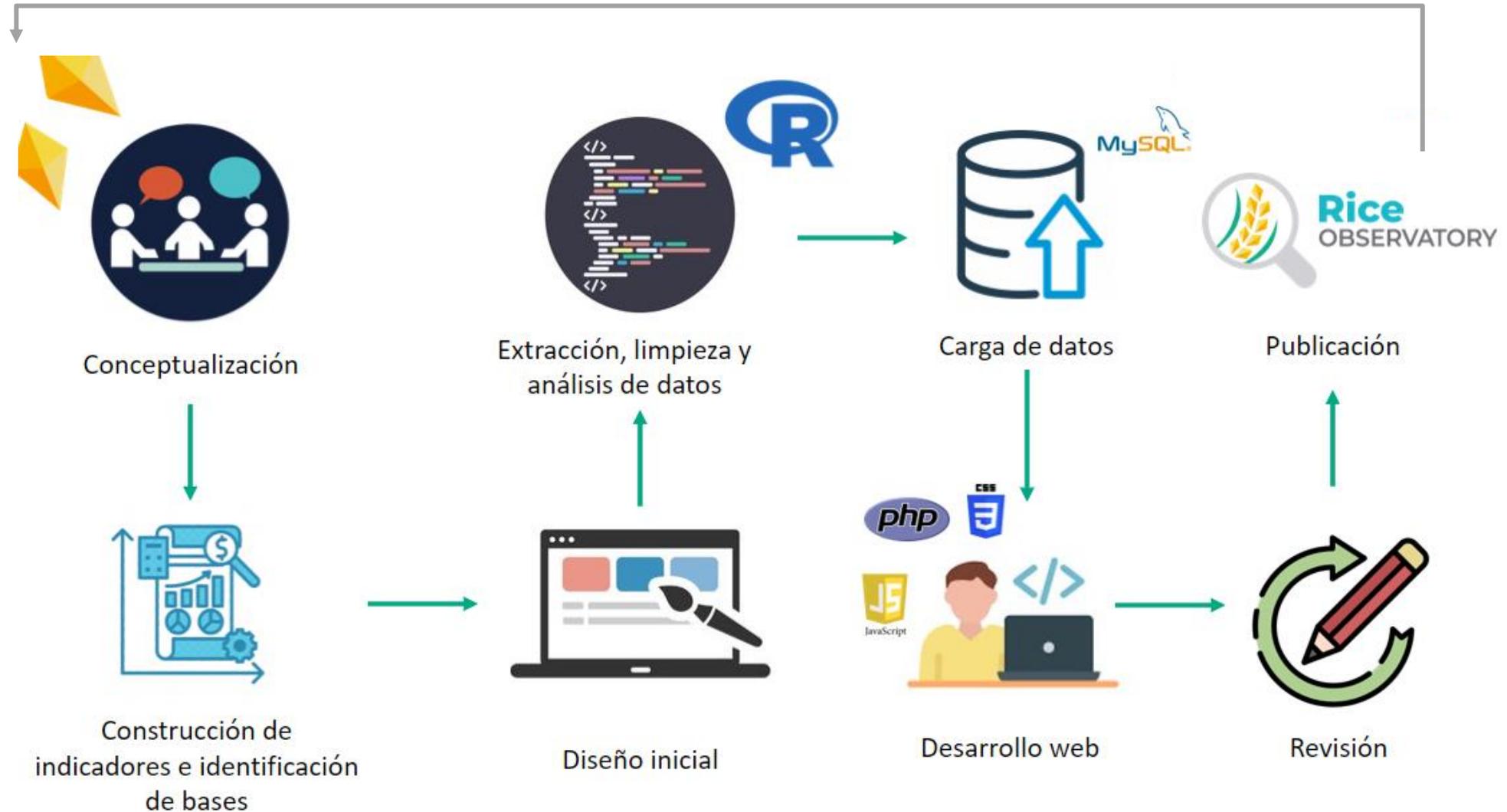
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FLAR



Alianza de Observatorios de Cultivos - proceso





Observatorio del Arroz – estructura inicial

QuickLinks



RESEARCH PROGRAM ON Rice

La Alianza Bioversity y CIAT es parte de CGIAR, una asociación de investigación mundial para un futuro con seguridad alimentaria



FLAR



Alliance Bioversity & CIAT



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What does resilience in #foodsystems look like? Hear how agriculture can adapt to a changing world through #climateaction, #agrobiodiversity and #sustainablelanduse and explore #innovation in our Annual Report - launched today! #ResilienceinAction alliancebioversityciat.org/2023-annual-re...



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Observatorio del Arroz – estructura de la visualización

Inicio Datos ▾ FLAR ▾ Acerca de ▾ Contacto

Contexto de la superficie - Mundo

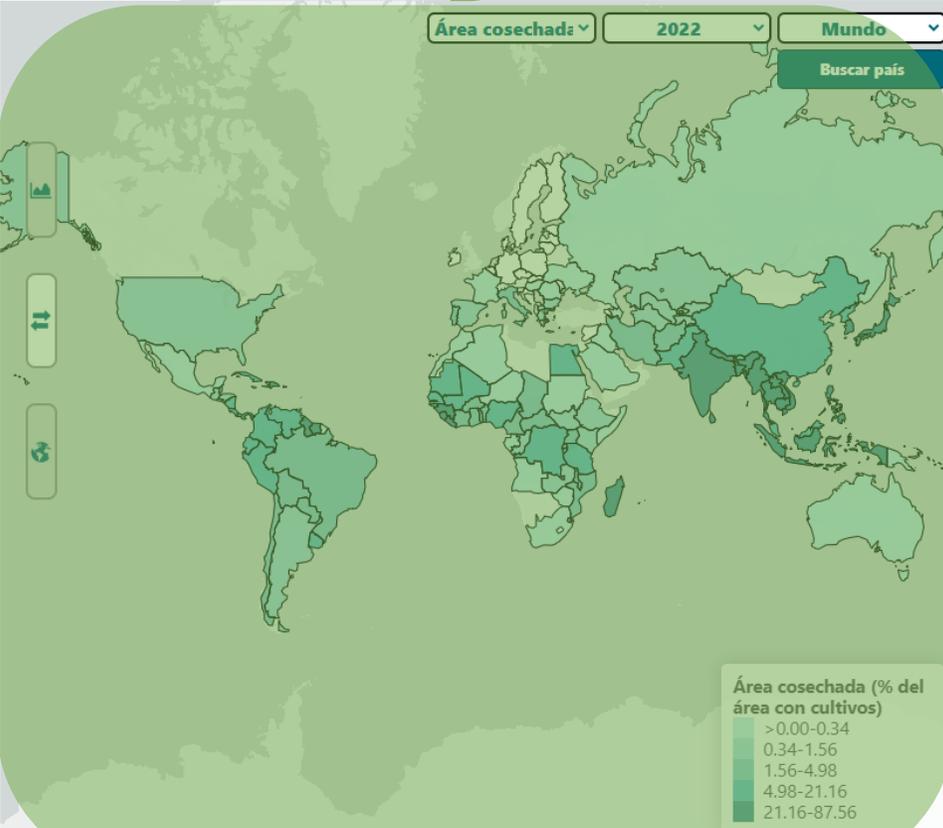
A

- Producción ▾
- Contexto de la superfi...
- Producción
- Valor de la producción
- Consumo
- Precios >
- Comercio >

Mapas y Gráficos
Metadatos

B

Área cosechada: 2022 Mundo Buscar país



Área cosechada (% del área con cultivos)
 >0.00-0.34
 0.34-1.56
 1.56-4.98
 4.98-21.16
 21.16-87.56

C

El Arroz fue el **3°** cultivo más importante en relación con la superficie cosechada en el año **2022**

2

Maiz



1

Trigo



3

Arroz, cascara



i

🖼️

⬇️

En promedio, el arroz fue el **109°** cultivo que más creció en la **última década**

En **2022**, la superficie cosechada de arroz representó:

11.35 %

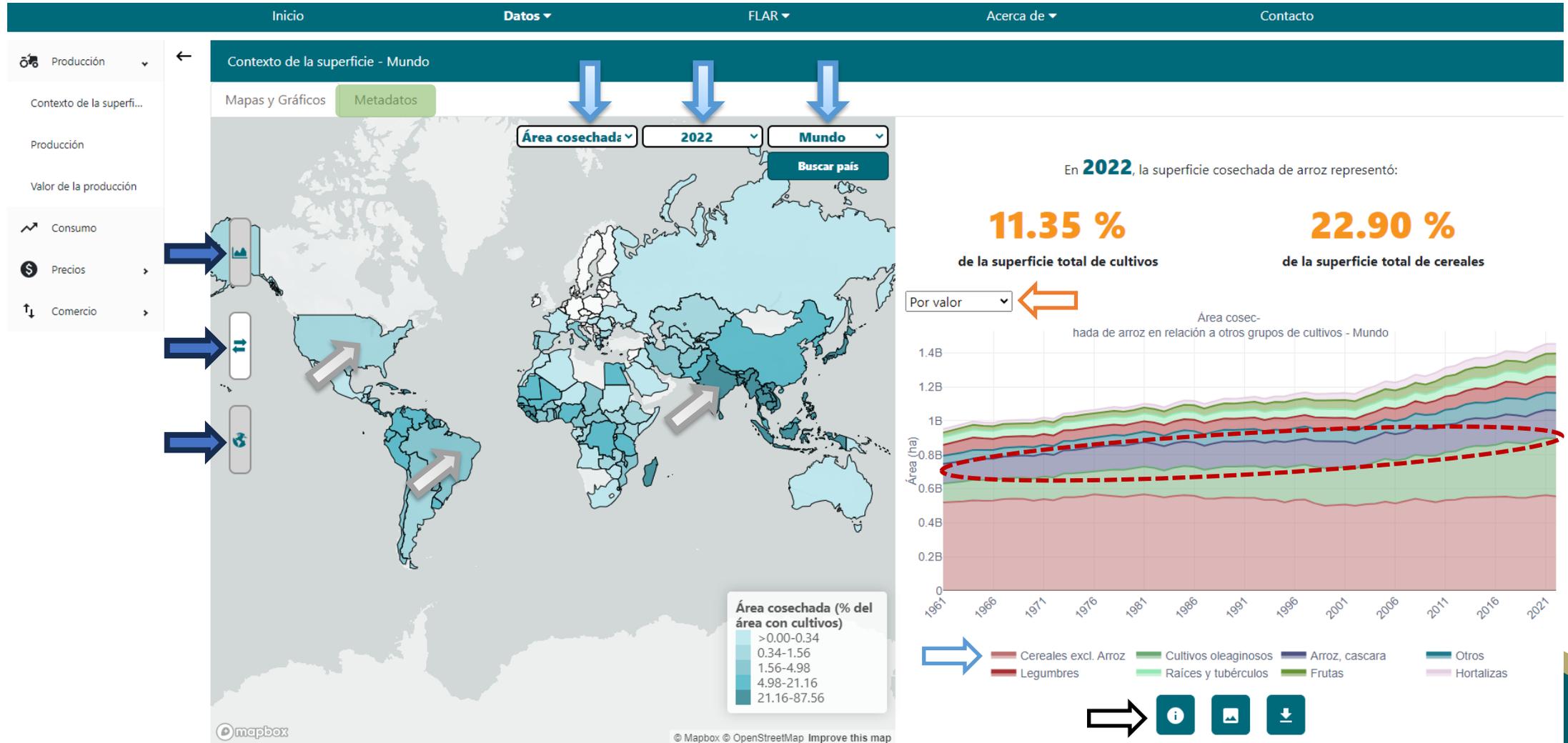
de la superficie total de cultivos

22.90 %

de la superficie total de cereales

Por valor ▾

Observatorio del Arroz – estructura de la visualización





Tableros del Observatorio



Contexto de la superficie del arroz y otros cereales

En **2002**, la superficie cosechada de arroz representó:

12.75 %

de la superficie total de cultivos

22.81 %

de la superficie total de cereales

En **2012**, la superficie cosechada de arroz representó:

12.12 %

de la superficie total de cultivos

23.09 %

de la superficie total de cereales

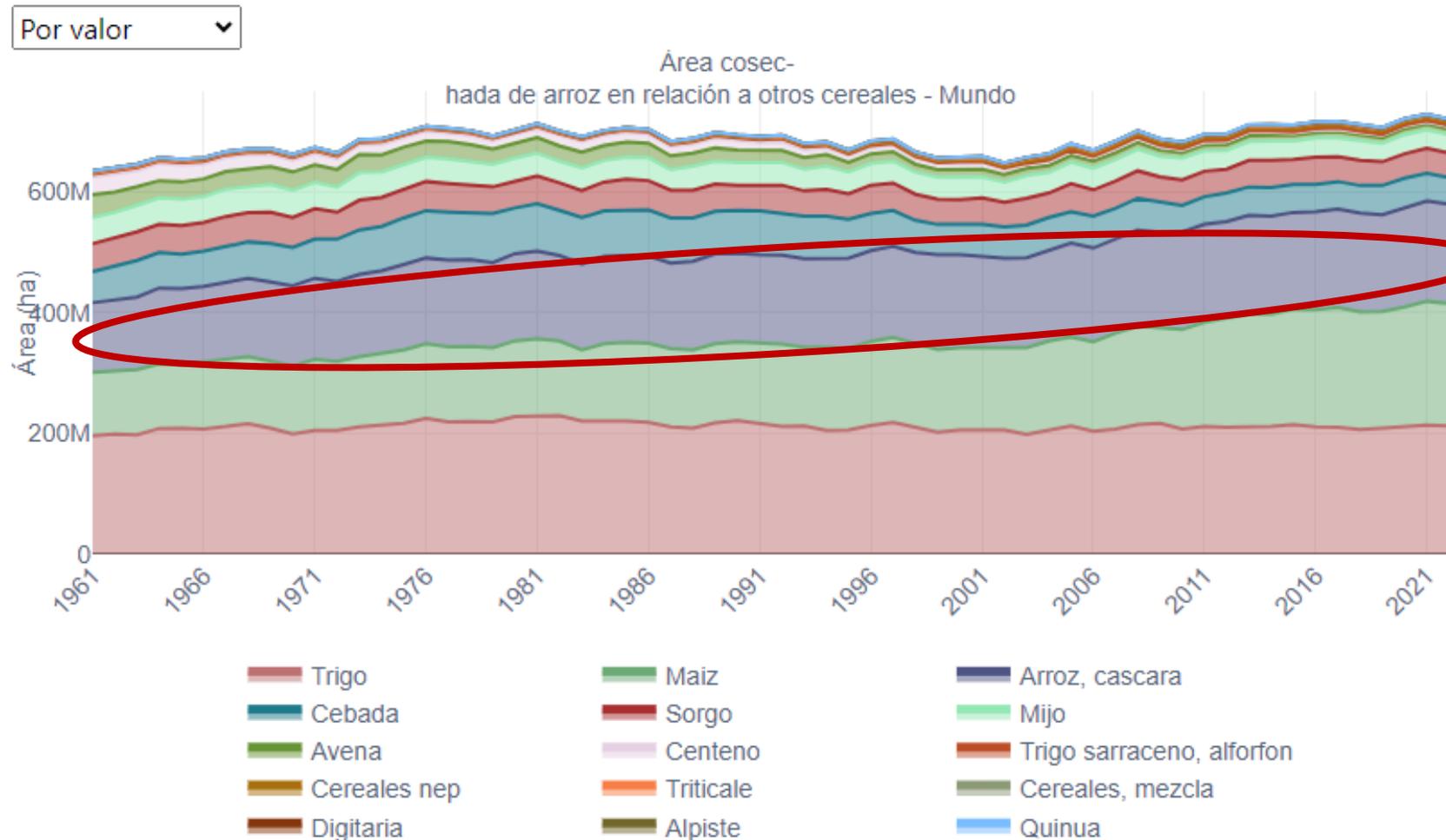
En **2022**, la superficie cosechada de arroz representó:

11.35 %

de la superficie total de cultivos

22.90 %

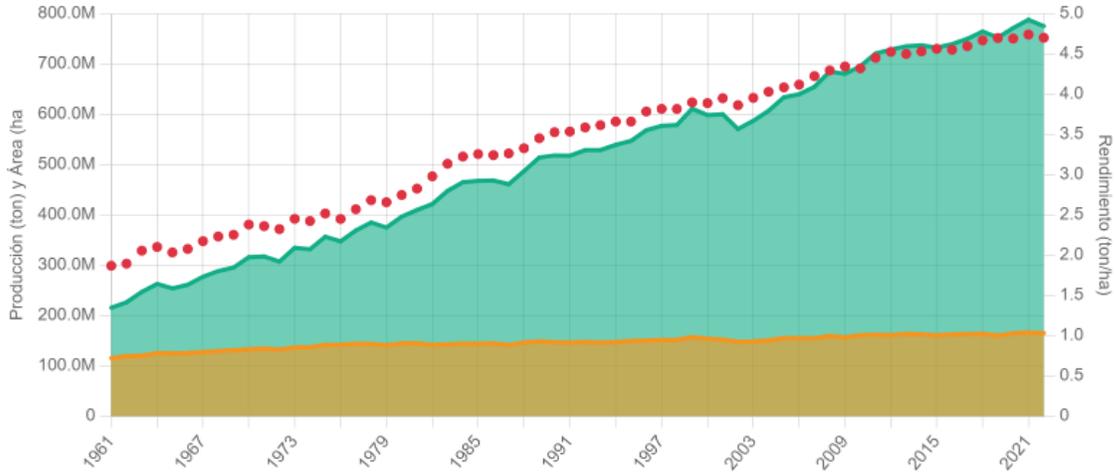
de la superficie total de cereales



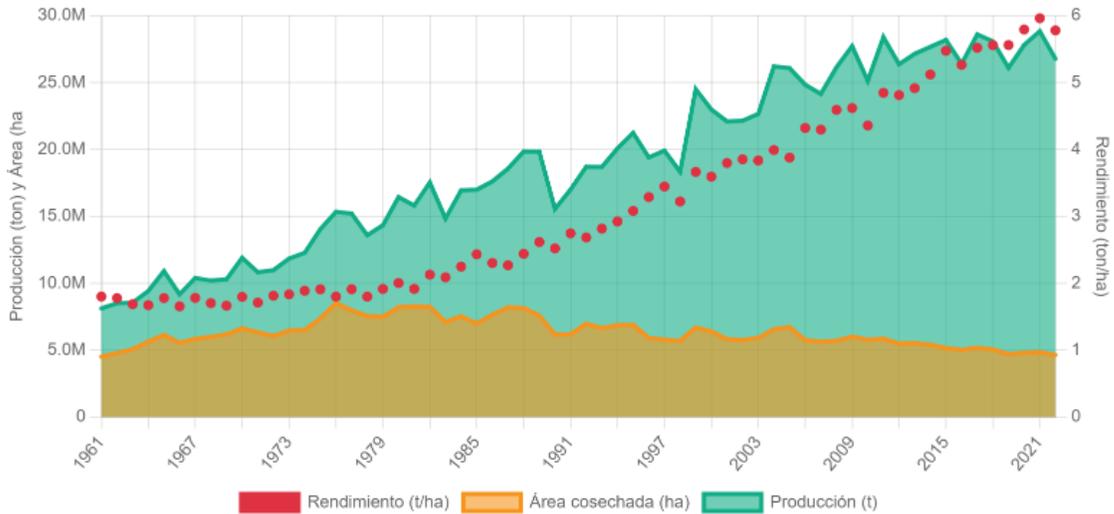


Producción, área, y rendimiento

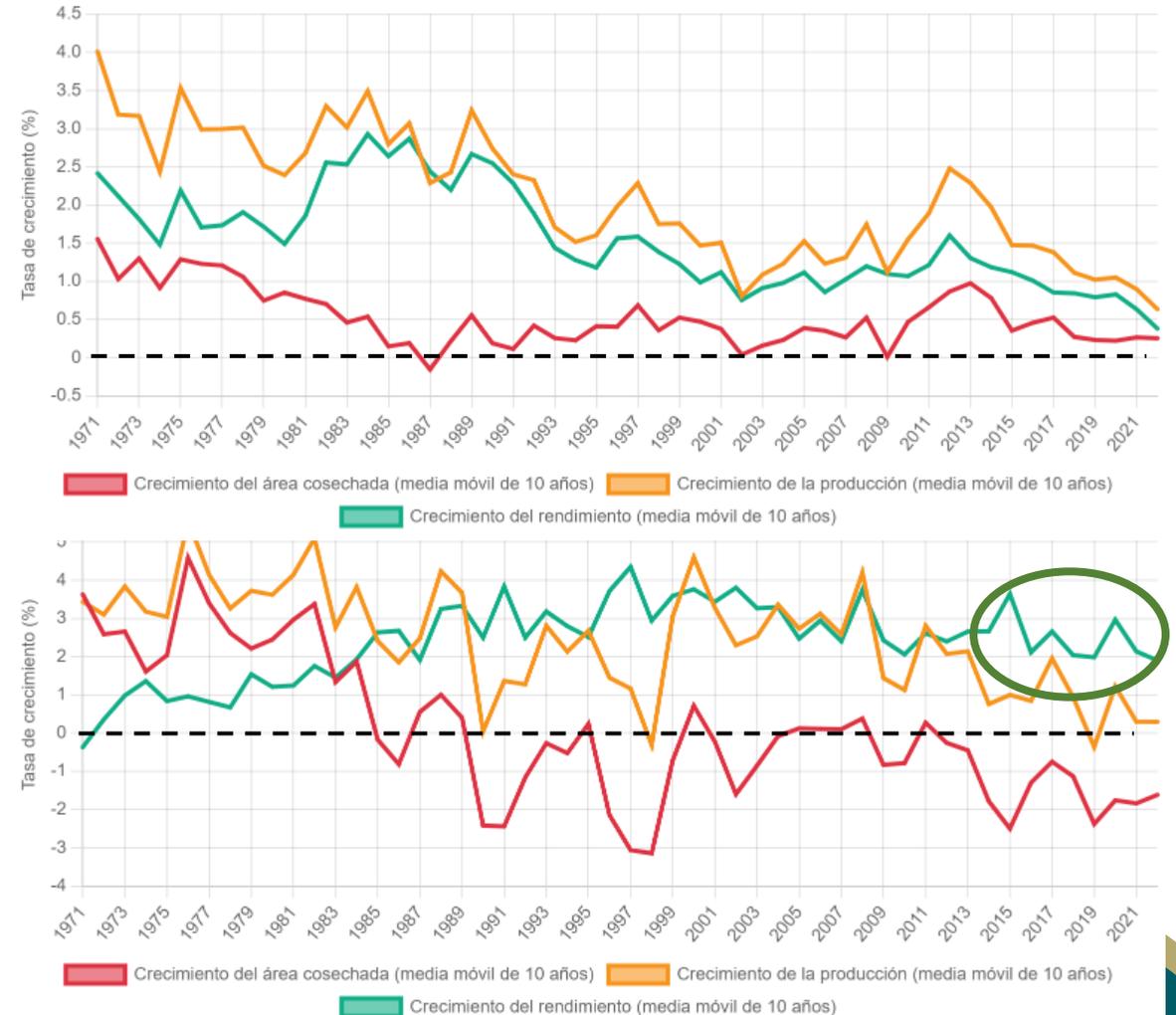
Área cosechada, producción y rendimiento - Mundo



Área cosechada, producción y rendimiento - América Latina y el Caribe

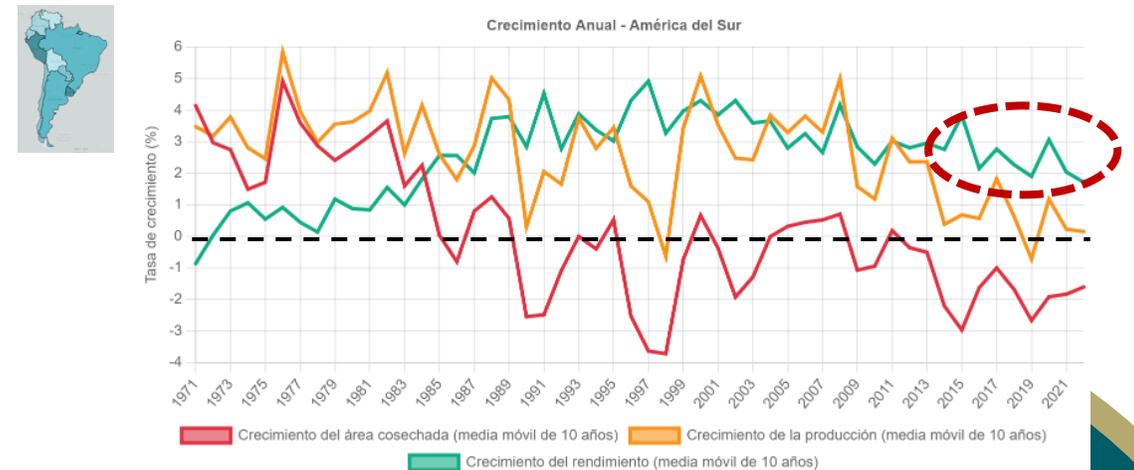
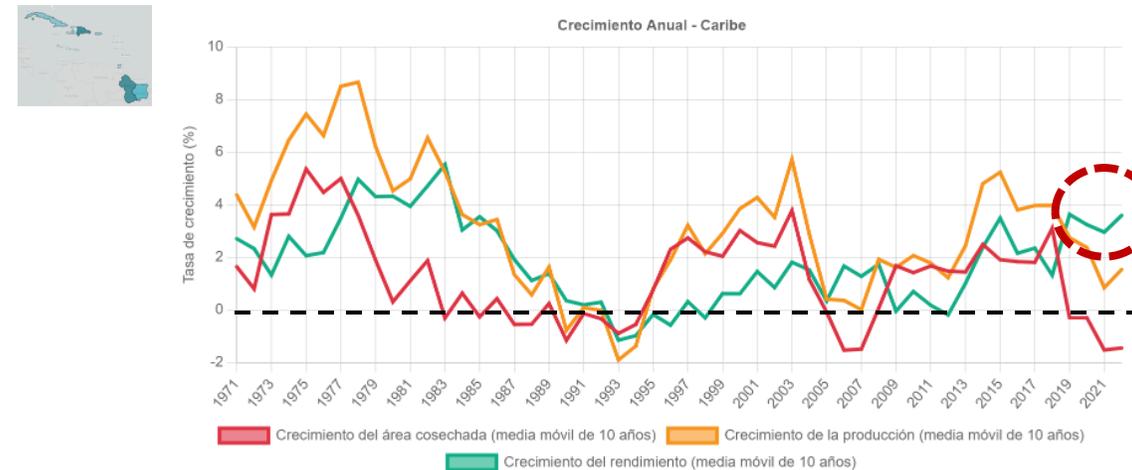
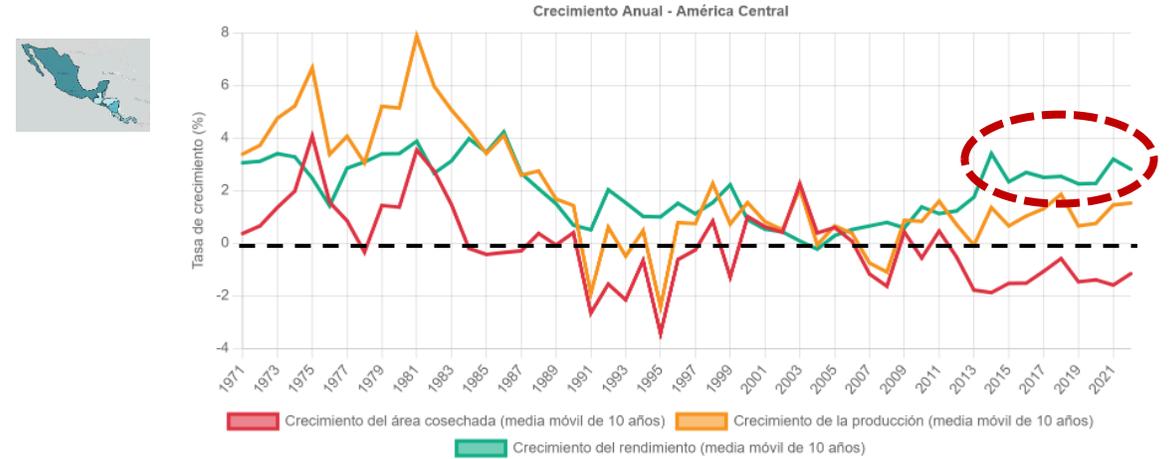
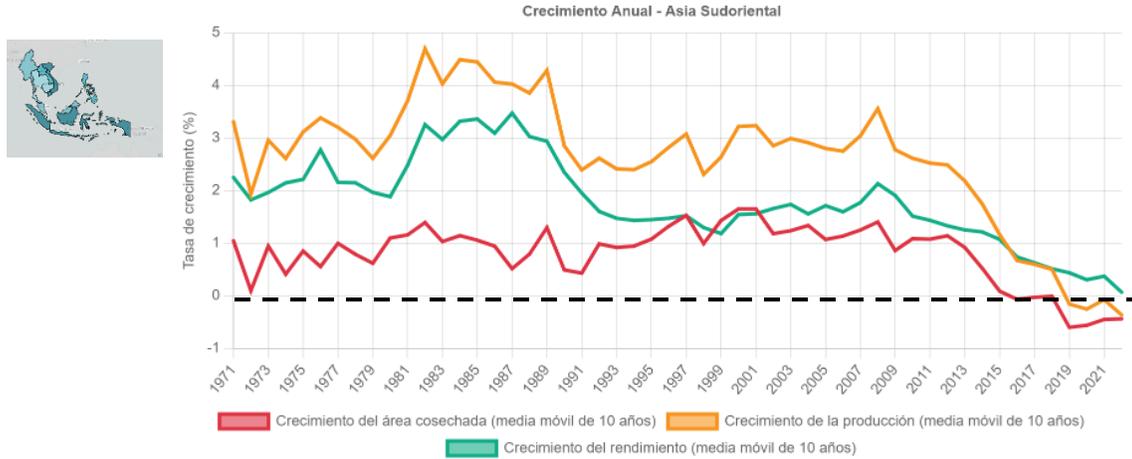


Crecimiento Anual - Mundo



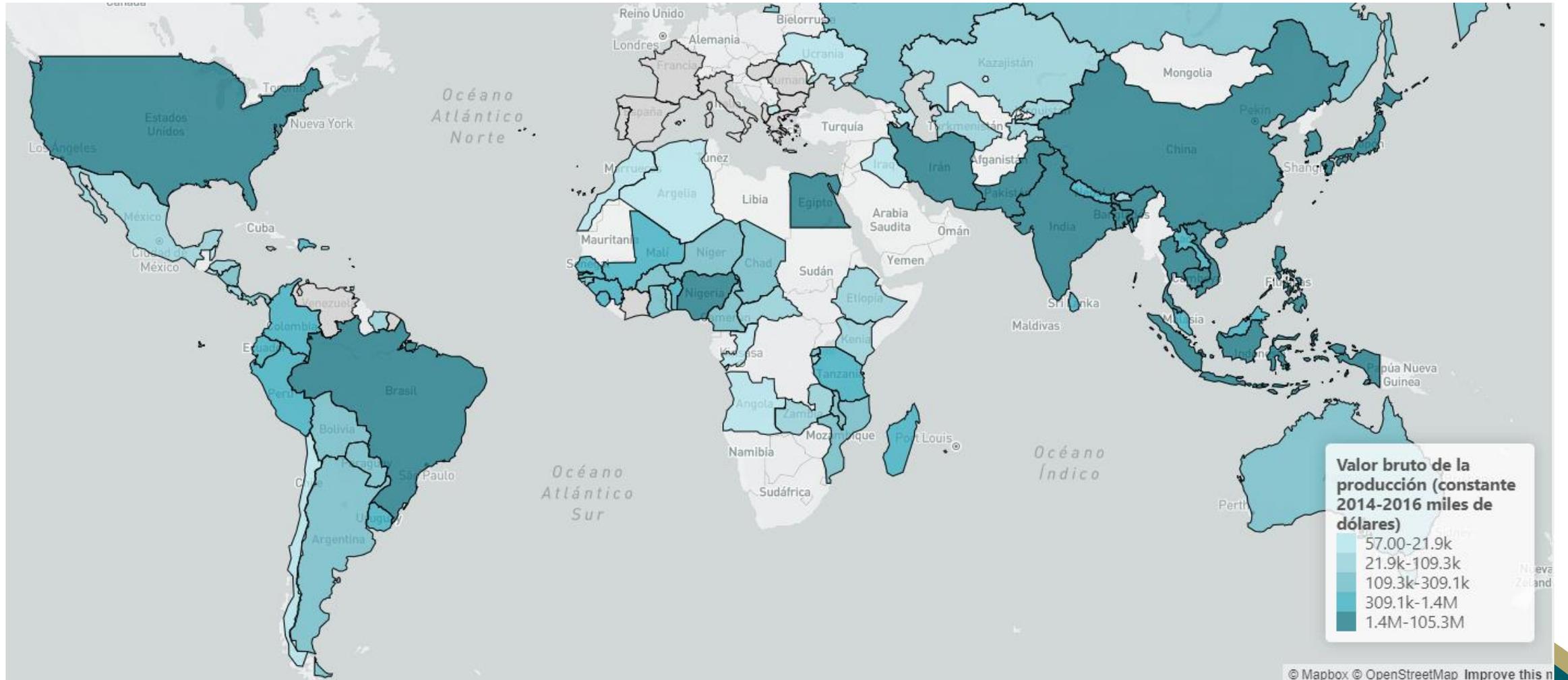


Tasas de crecimiento de producción, área y rendimiento



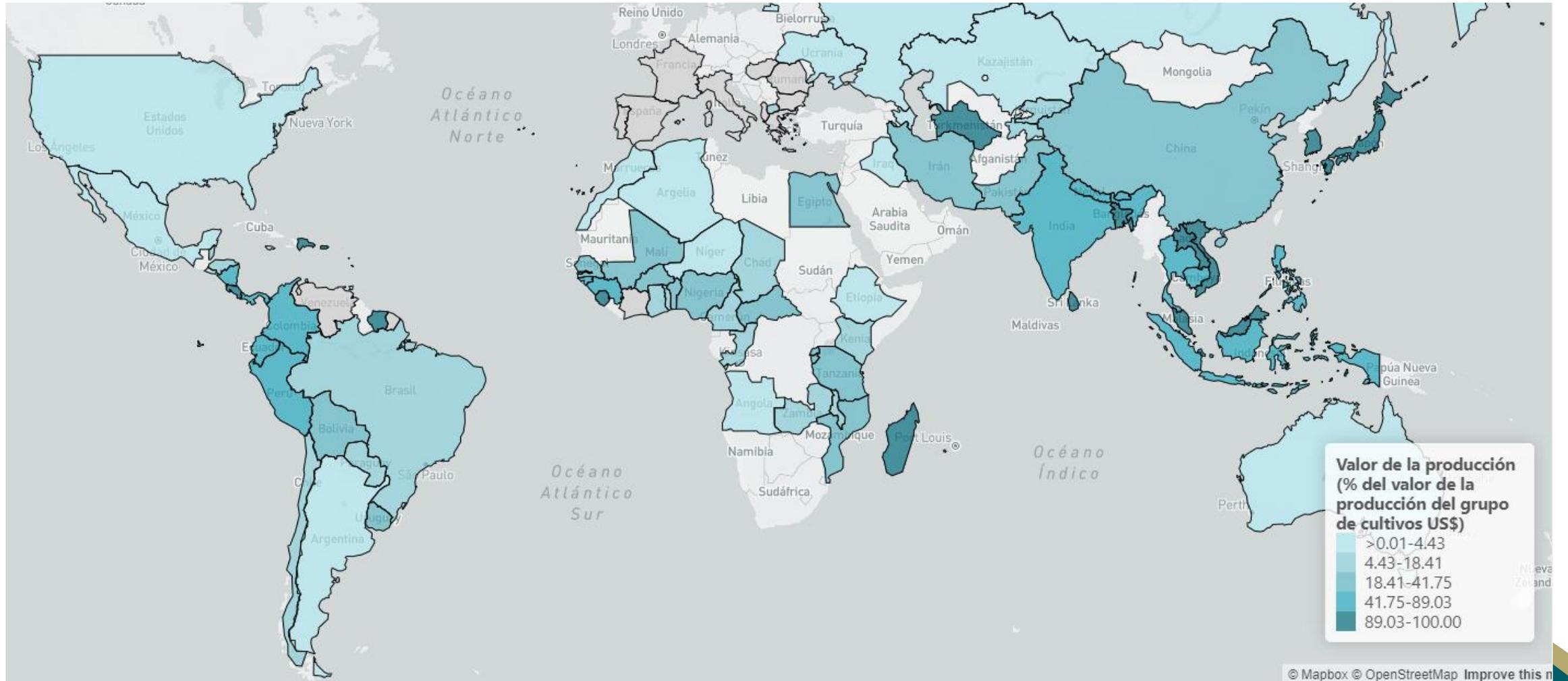


Valor de la producción en dólares



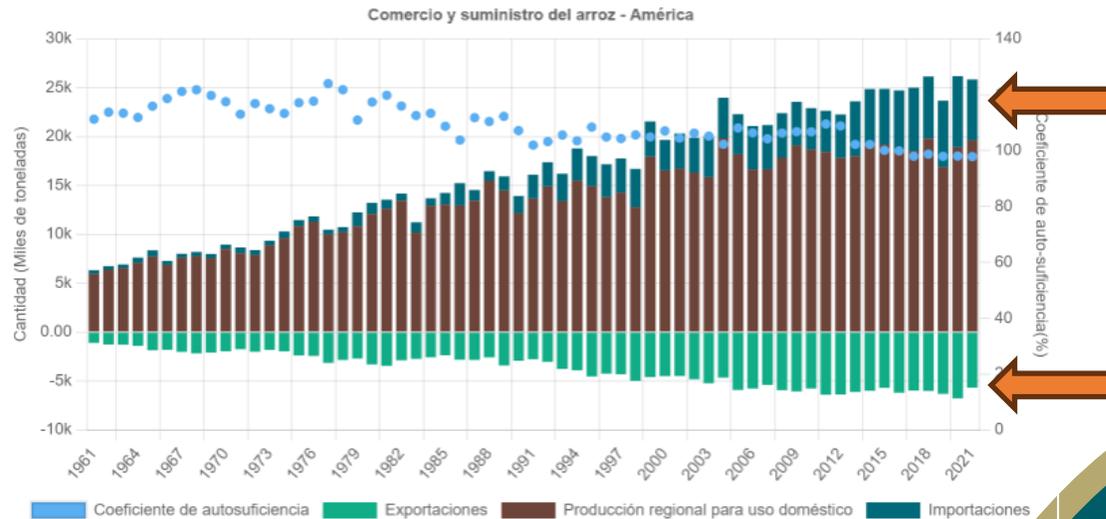
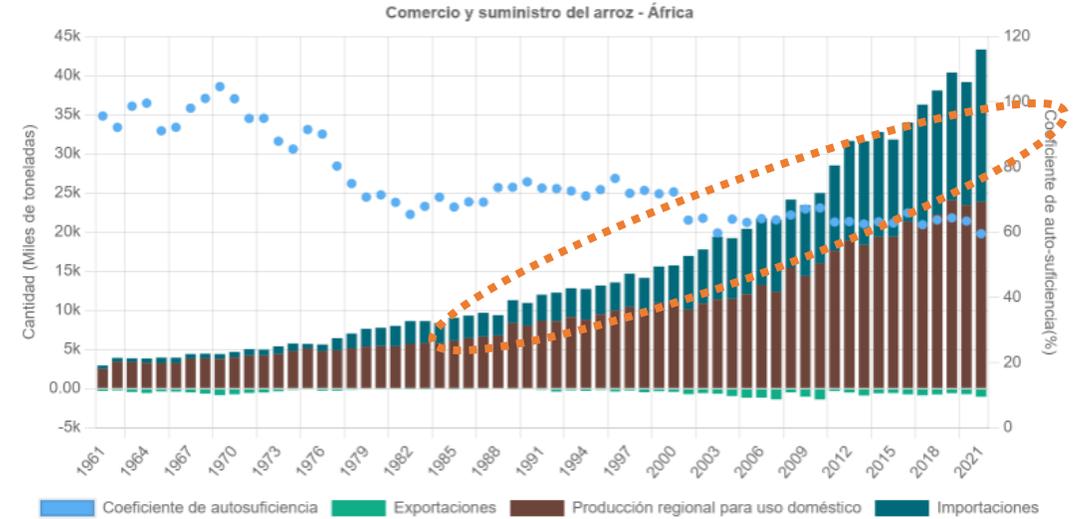
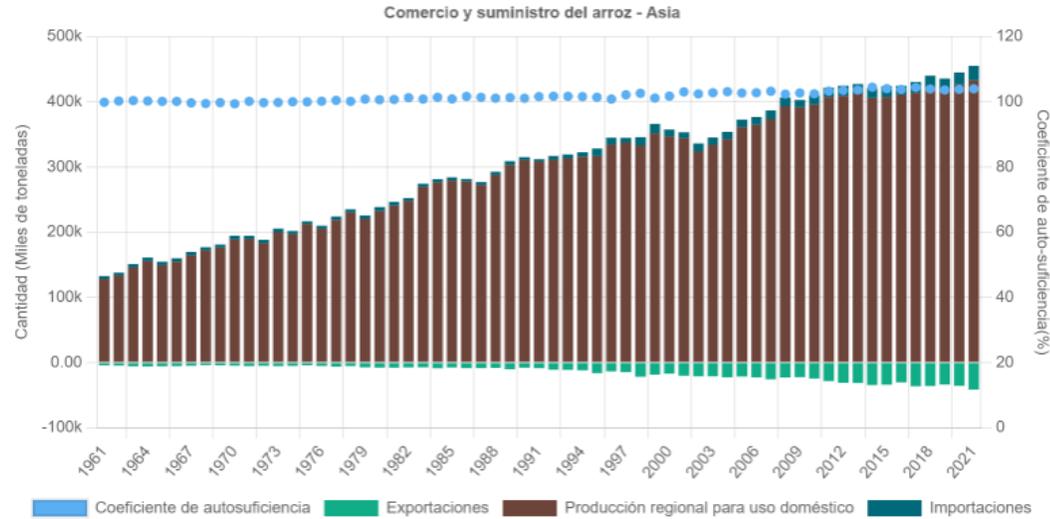


Porcentaje del valor de la producción de arroz para cereales





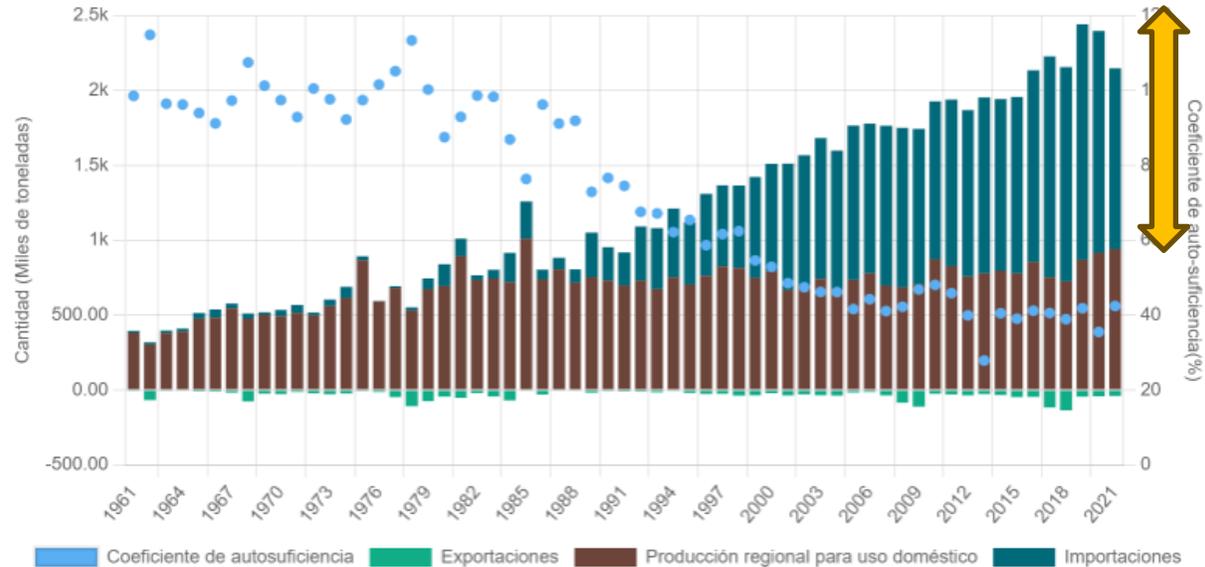
Uso doméstico, exportaciones, e importaciones



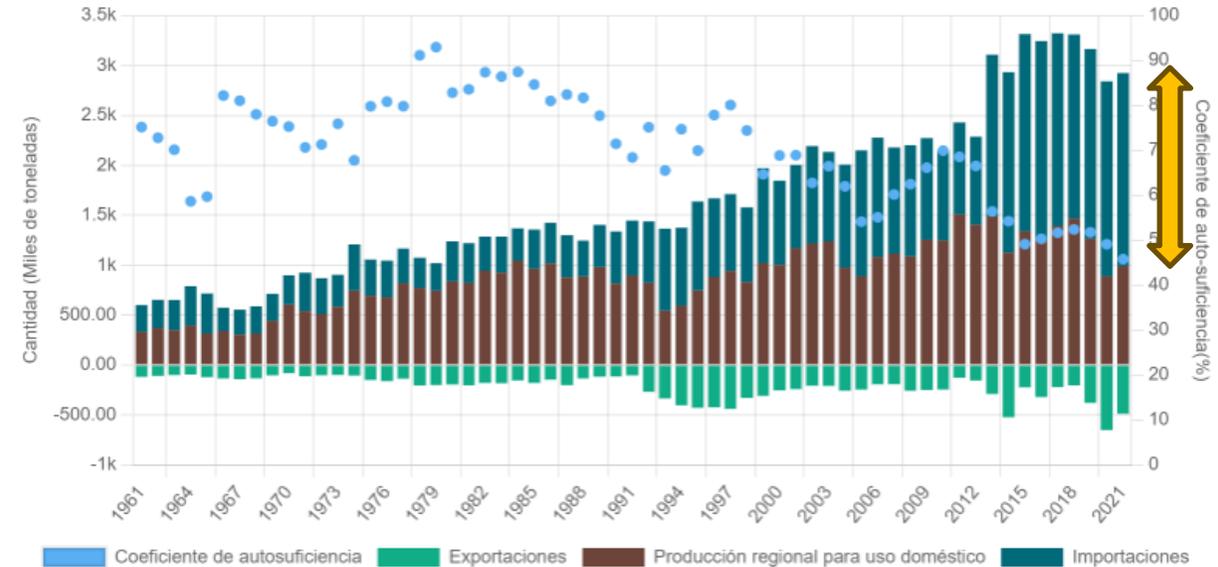


Uso doméstico, exportaciones, e importaciones

Comercio y suministro del arroz - América Central

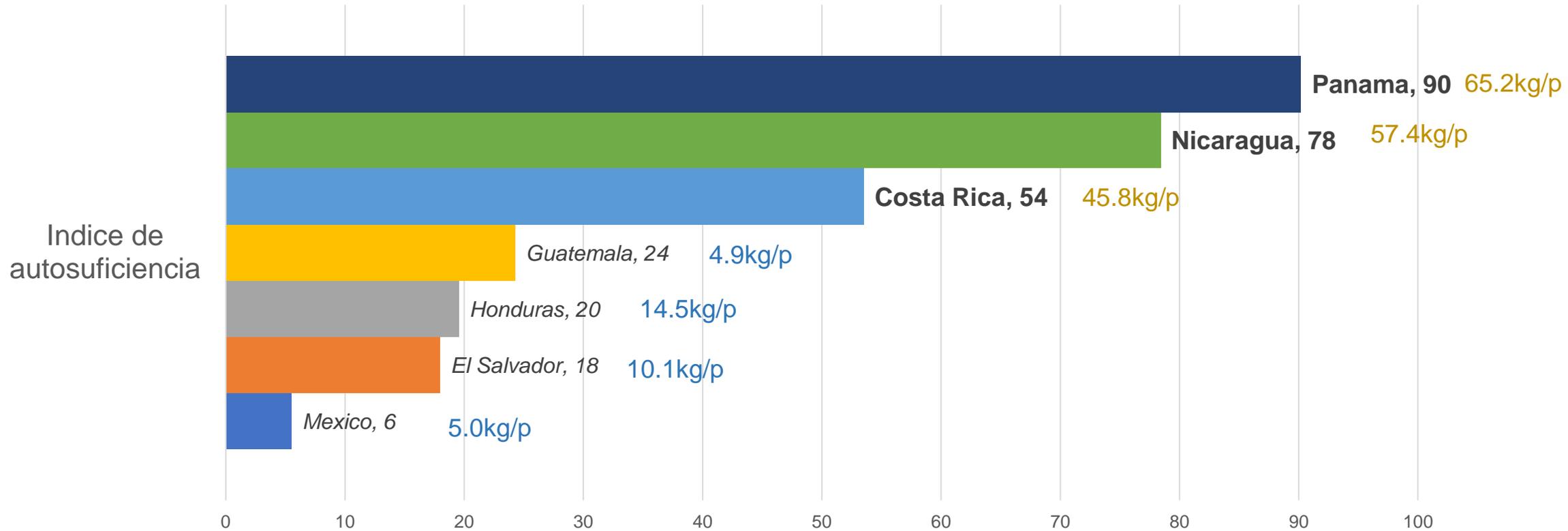


Comercio y suministro del arroz - Caribe





Índice de autosuficiencia y consumo per capita





Catalogo de variedades y características de calidad

Variedad: **idiap 52-05**

Localización:

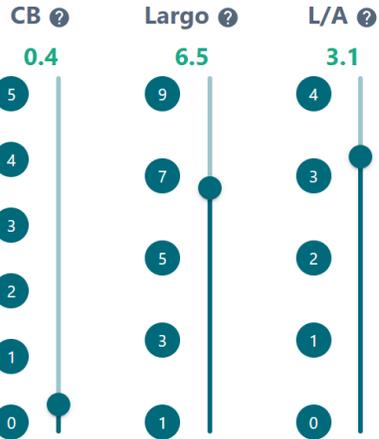
Panamá



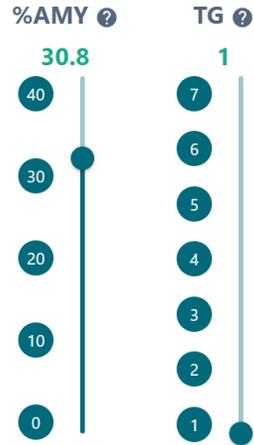
Ampliar

Nota: Muestra única suministrada por mejoradores de plantas de organizaciones miembros de FLAR, cosechada en diferentes entornos y bajo condiciones de manejo poscosecha y molienda no estandarizadas. Los resultados mostrados son el rendimiento promedio de la variedad para los países presentes en la ubicación.

Apariencia del grano



Calidad de cocción



Variedad: **Estrella 71**

Localización:

Panamá



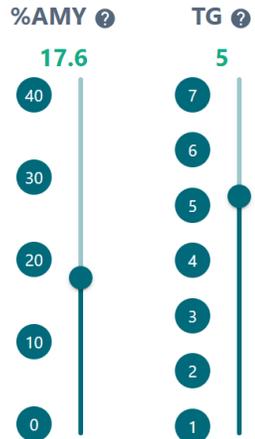
Ampliar

Nota: Muestra única suministrada por mejoradores de plantas de organizaciones miembros de FLAR, cosechada en diferentes entornos y bajo condiciones de manejo poscosecha y molienda no estandarizadas. Los resultados mostrados son el rendimiento promedio de la variedad para los países presentes en la ubicación.

Apariencia del grano



Calidad de cocción



Variedad 1

Variedad 2

País

Panamá

País

Nicaragua

Variedades

Estrella 71

Variedades

Anar 97



Nota: Muestra única suministrada por fitomejoradores de organizaciones miembros del FLAR, cosechada en diferentes ambientes y bajo condiciones no estandarizadas de manipulación post-cosecha y molienda.

Comparador

Apariencia del grano



Calidad de cocción



FLAR



Nuevos Tableros del Observatorio



Proyecciones de rendimiento



Global Food Security 41 (2024) 100755

Contents lists available at ScienceDirect

Global Food Security

journal homepage: www.elsevier.com/locate/gfs



Food and nutrition security under changing climate and socioeconomic conditions

Mark W. Rosegrant, Timothy B. Sulser, Shahnila Dunston, Abhijeet Mishra, Nicola Cenacchi, Yohannes Gebretsadik, Richard Robertson, Timothy Thomas, Keith Wiebe

Foresight and Policy Modeling, International Food Policy Research Institute, United States

ARTICLE INFO

Keywords:
Food security
Nutrition security
Projections modeling
Global food system

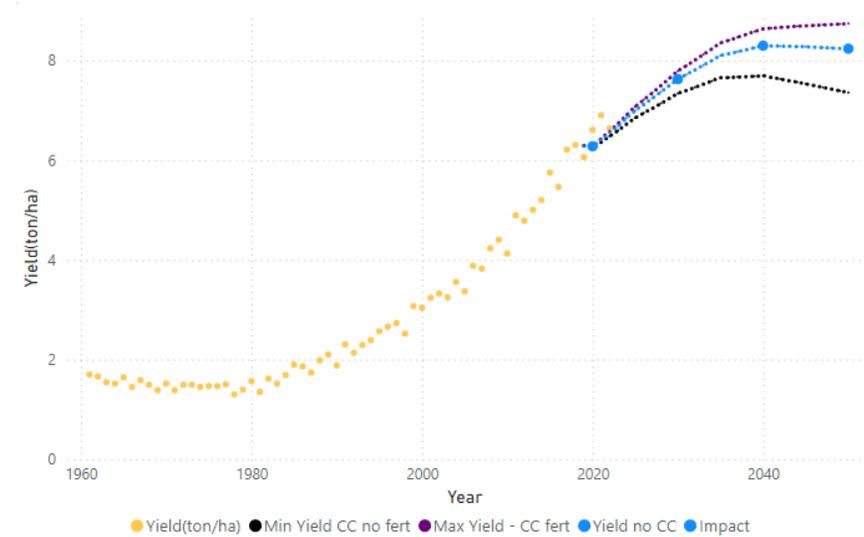
ABSTRACT

Food and nutrition security have become increasingly critical concerns for policy makers given that the slow progress on eliminating these challenges has reversed in recent years, with an increase in the number of hungry people by 122 million (20 percent) between 2019 and 2022. In addition to rebuilding in the aftermath of the COVID-19 pandemic, the global food system faces inter-related challenges from climate change, trade disruptions, increasing scarcity of water and land, environmental degradation, and evolving food demand patterns, among other factors. This paper assesses prospects to 2050 for food and nutrition security with a focus on low- and middle-income countries around the world in the context of these broader food system changes. Measures of food security presented here include per capita food and kilocalorie availability, the number and prevalence of hungry people, and micronutrient availability. Projected outcomes are assessed using the latest version of the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) framework, a modeling system that combines information from climate models, crop simulation models, and river basin level hydrological and water supply and demand models linked to a global, partial equilibrium, multimarket agriculture sector model.

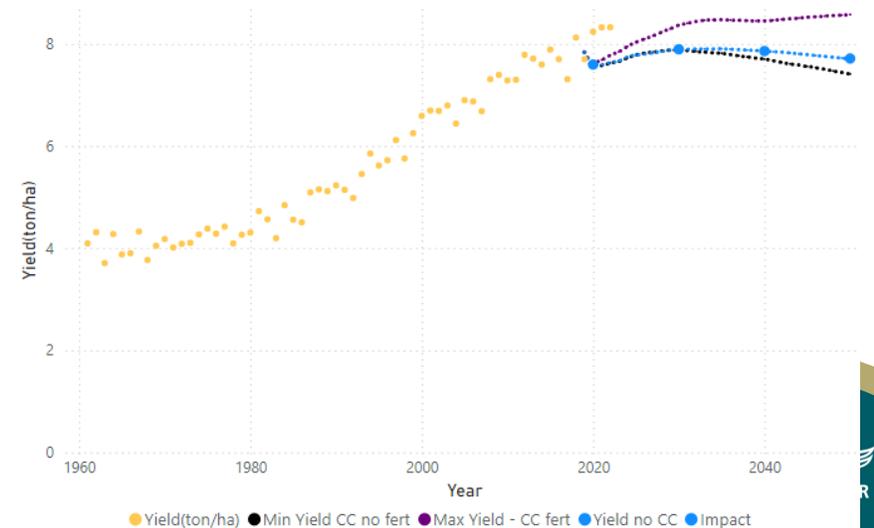


Rosegrant, M.W., et al. "Food and nutrition security under changing climate and socioeconomic conditions." *Global Food Security* 41 (2024): 100755.

Brasil



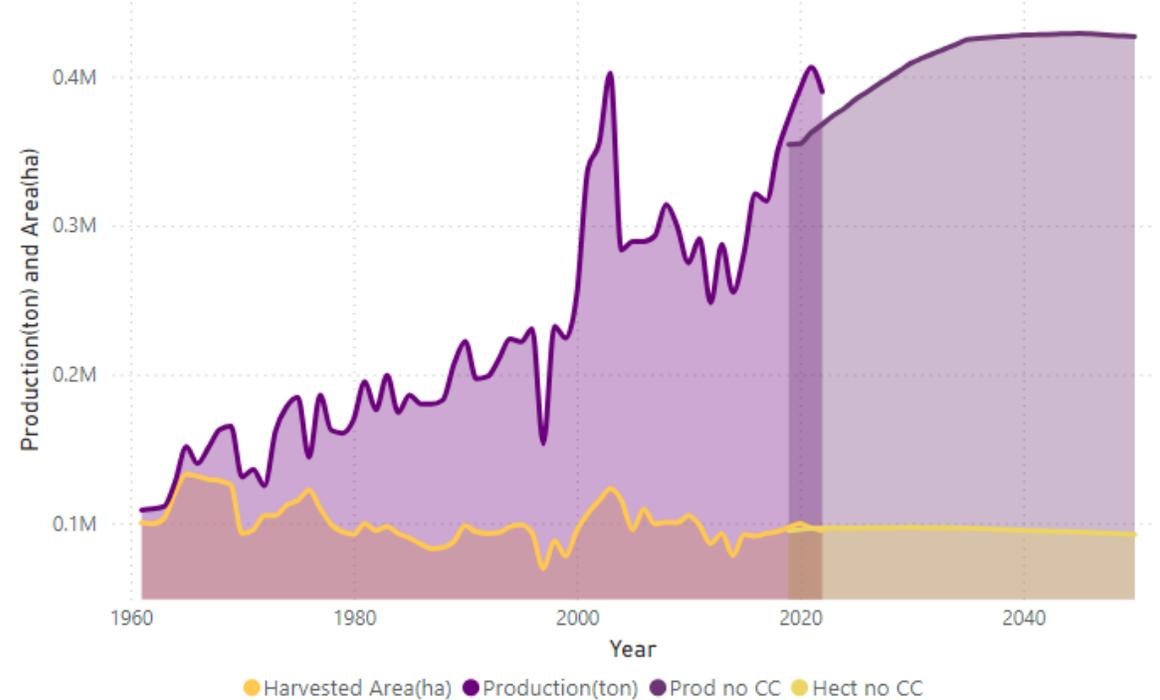
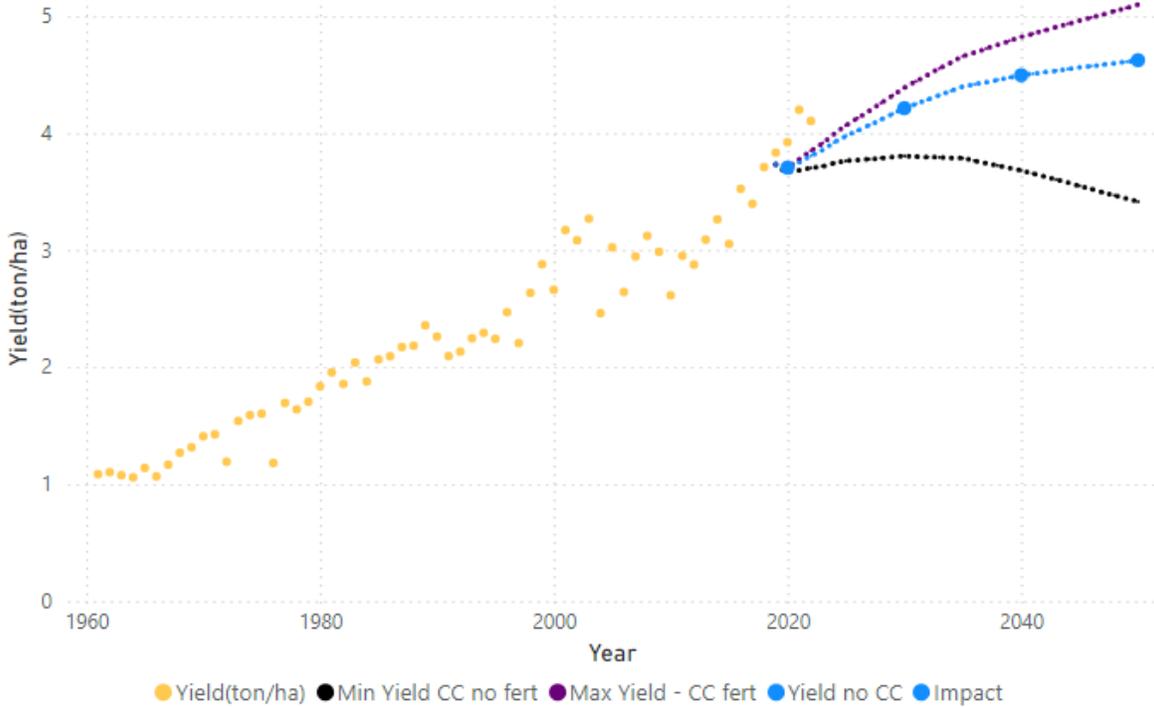
Perú





Proyecciones de rendimiento, producción y área

Panamá





Inversiones en I+D de innovaciones

Investment scenarios for rice R&D in LAC welfare and food security implications



Share



Citation

Petsakos, A.; Andrade, R.; Rivera, T.; Schiek, B. (2023) Investment scenarios for rice R&D in LAC welfare and food security implications. Presentation prepared for the 6th International Rice Congress 2023- Accelerating Transformation of Rice-Based Food Systems: From Gene to Globe, Manila, Philippines, 16-19 October 2023. Cali (Colombia): International Center for Tropical Agriculture, 11 sl.

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<https://hdl.handle.net/10568/134479>

Abstract/Description

Increasing annual investments from 225 to 260 million USD by 2050 is needed to sustain the yield growth implied by SSP2 (0.6% annually). If we want to reach 10t/ha (1.5% annual increase) investments must increase to 275 million USD annually by 2050. Targeting higher yields will mainly generate economic benefits for producers, but very limited benefits for consumers and for food security in LAC. These economic benefits in LAC can be attained if international trade is possible. When prioritizing R&D investments we need to identify broader impacts: who wins, who losses, and where.

Files

Petsakos et al 2023 – investment for rice R&D in LAC.pdf (933.93 KB)

Authors

Petsakos, Athanasios
Andrade, R.
Rivera, T.
Schiek, B.

Date Issued

2023-10

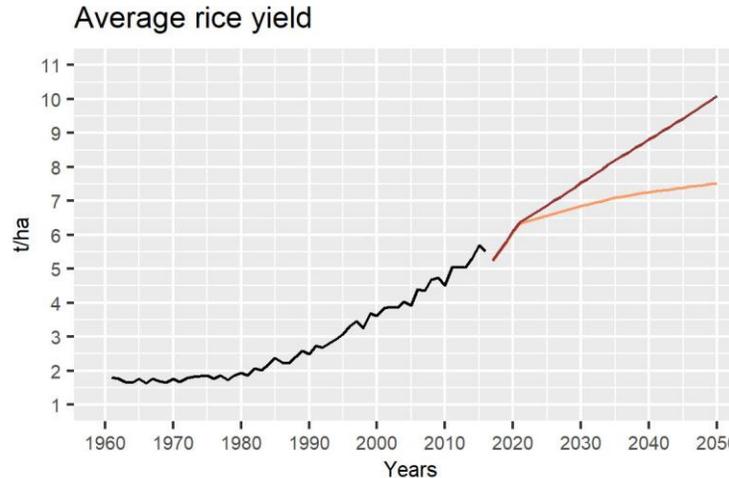
Language

en

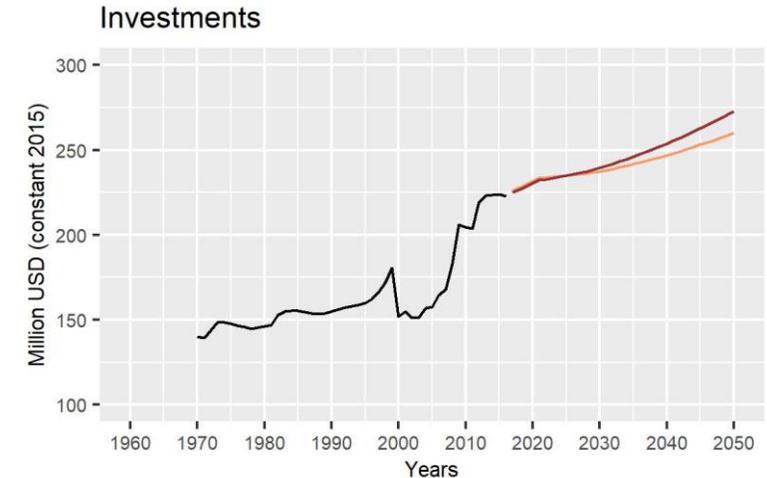
Type



Petsakos, A., Andrade, R., Rivera, T., & Schiek, B. (2023). Investment scenarios for rice R&D in LAC welfare and food security implications. International Rice Conference, Philippines.

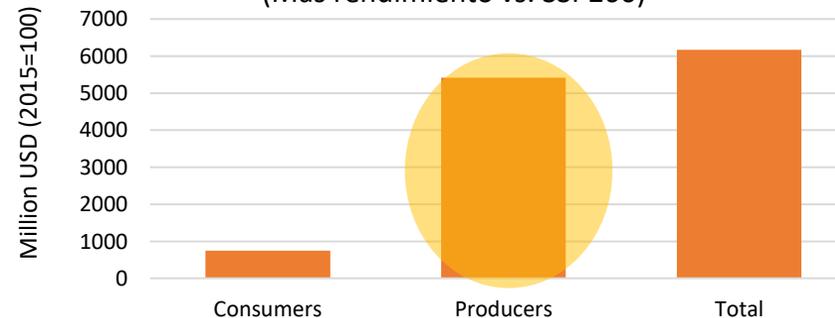


— Historical — SSP260 — Yield gap target



— Historical — SSP260 — Yield gap target

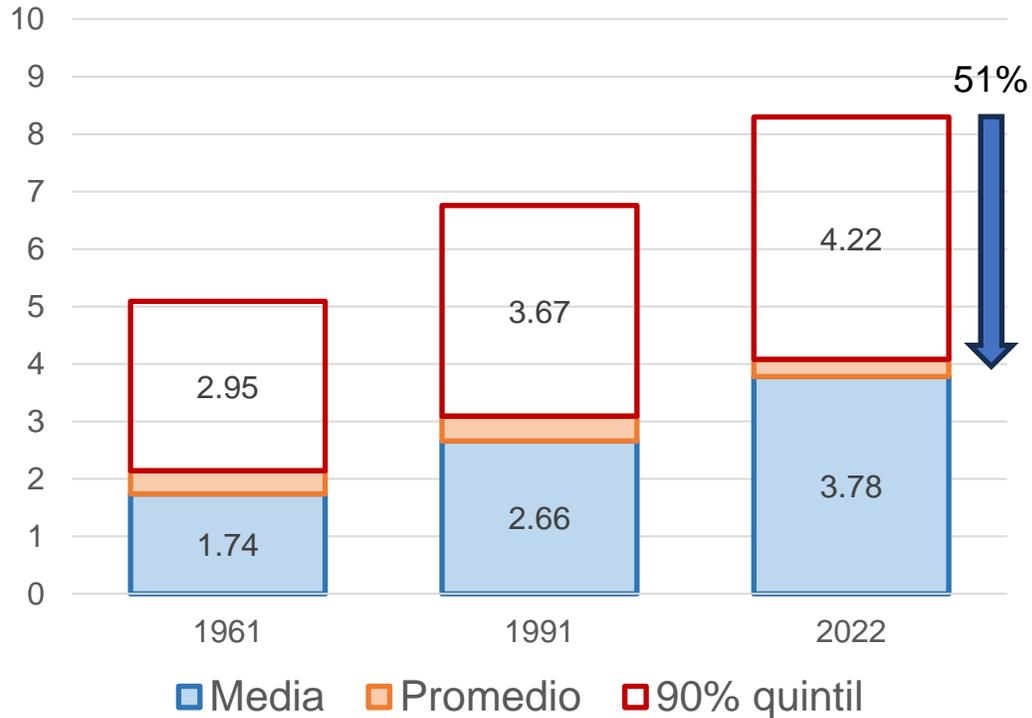
Cambio en el bienestar de invertir para lograr 10 t/ha (Mas rendimiento vs. SSP260)



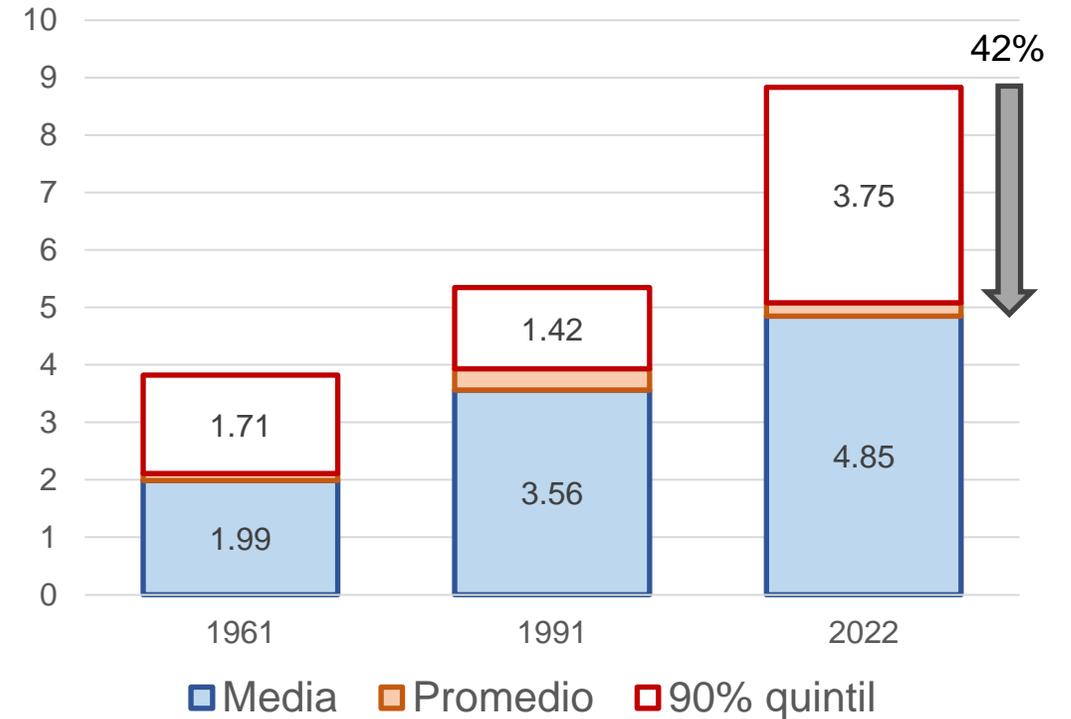


Brechas de rendimiento

Brecha de rendimiento Global (t/ha)



Brecha de rendimiento en LAC (t/ha)





Adopción de variedades mejoradas



Urioste, S., et al. "Boletín informativo del sector arrocero Panamá 2010-2017." (2019), CIAT, Colombia.

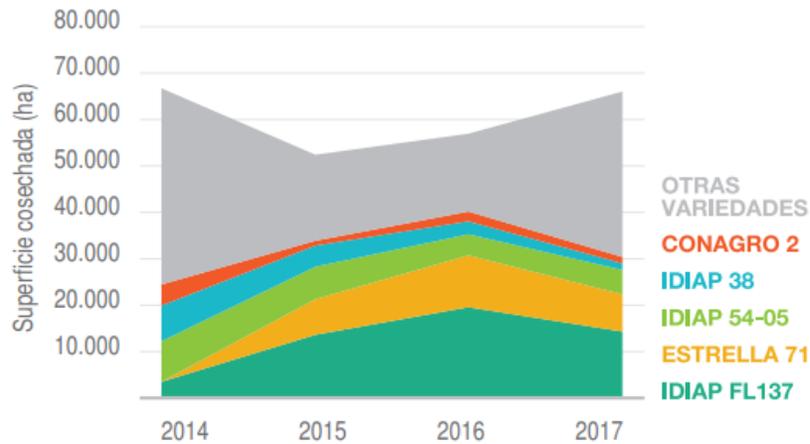


Andrade, R., et al. "Boletín informativo del sector arrocero Colombia 2005-2018." (2019), CIAT, Colombia.

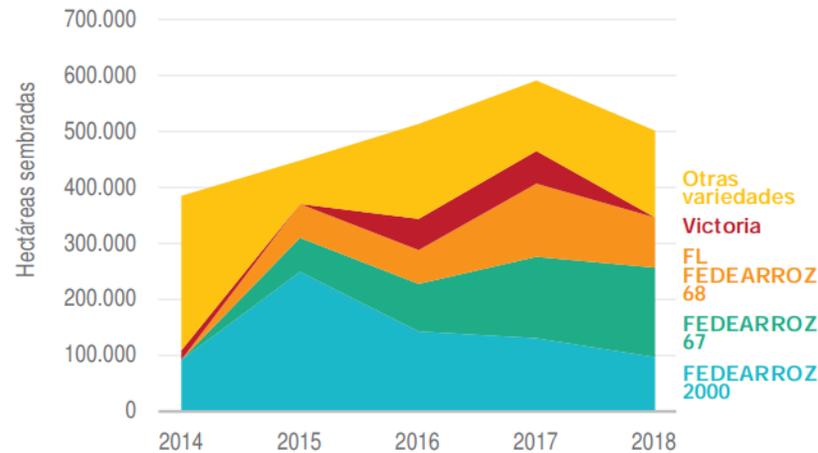


Urioste, Sergio, et al. "Boletín informativo del sector arrocero Perú 2005-2018. 6 p." (2019).

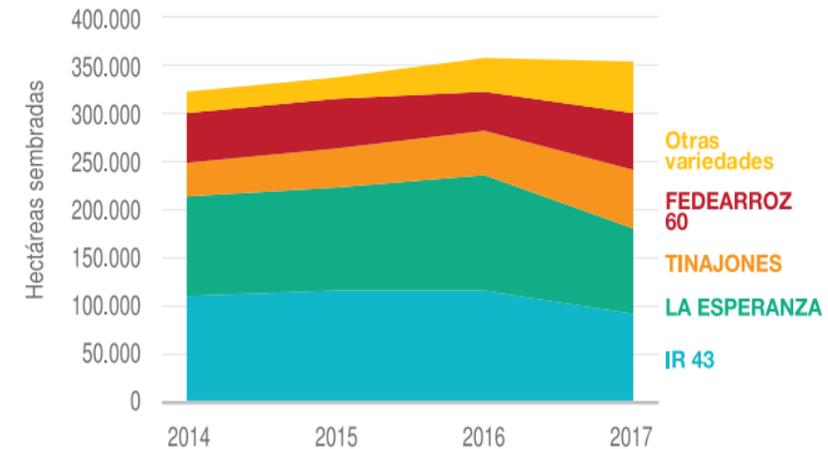
Coomportamiento del área sembrada por variedad de arroz en Panamá.



Comportamiento del área sembrada por variedad de arroz en Colombia

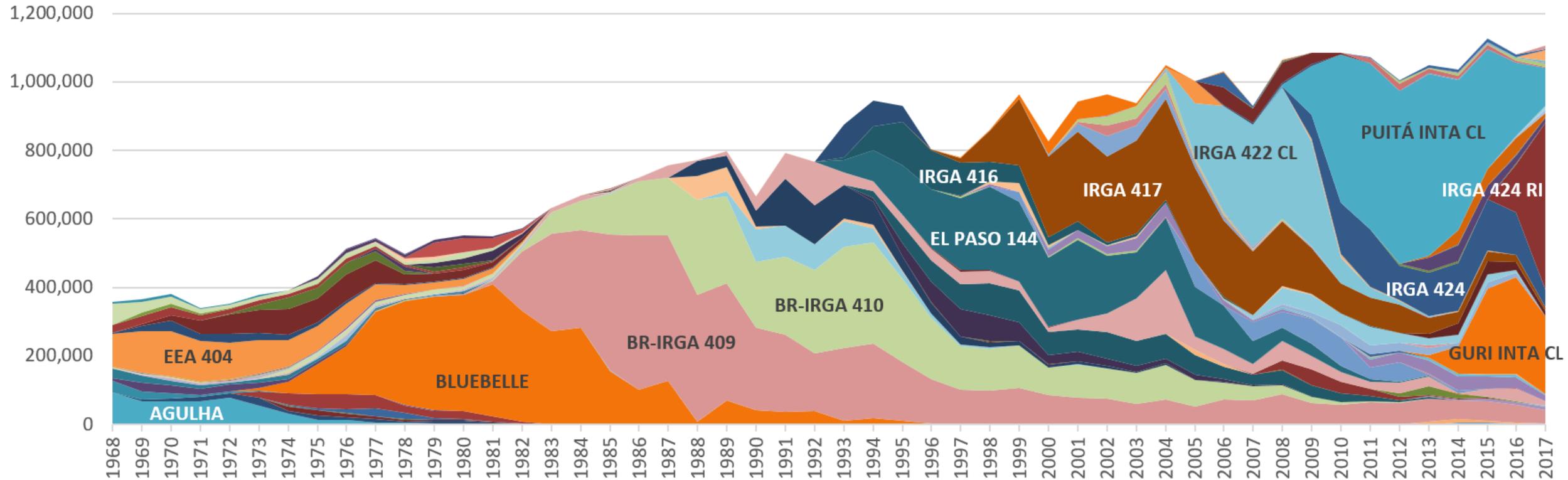


Comportamiento del área sembrada por variedad de arroz





Adopción de variedades mejoradas

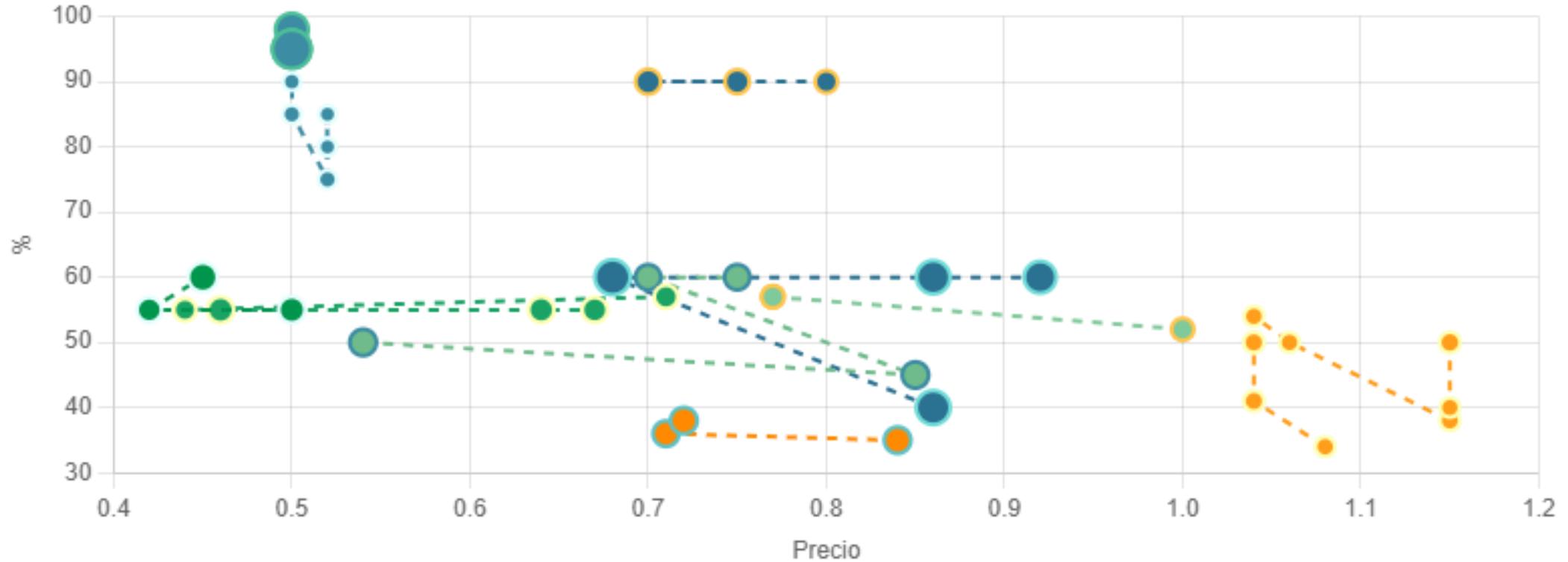


Fuente: Base de datos de monitoreo IRGA





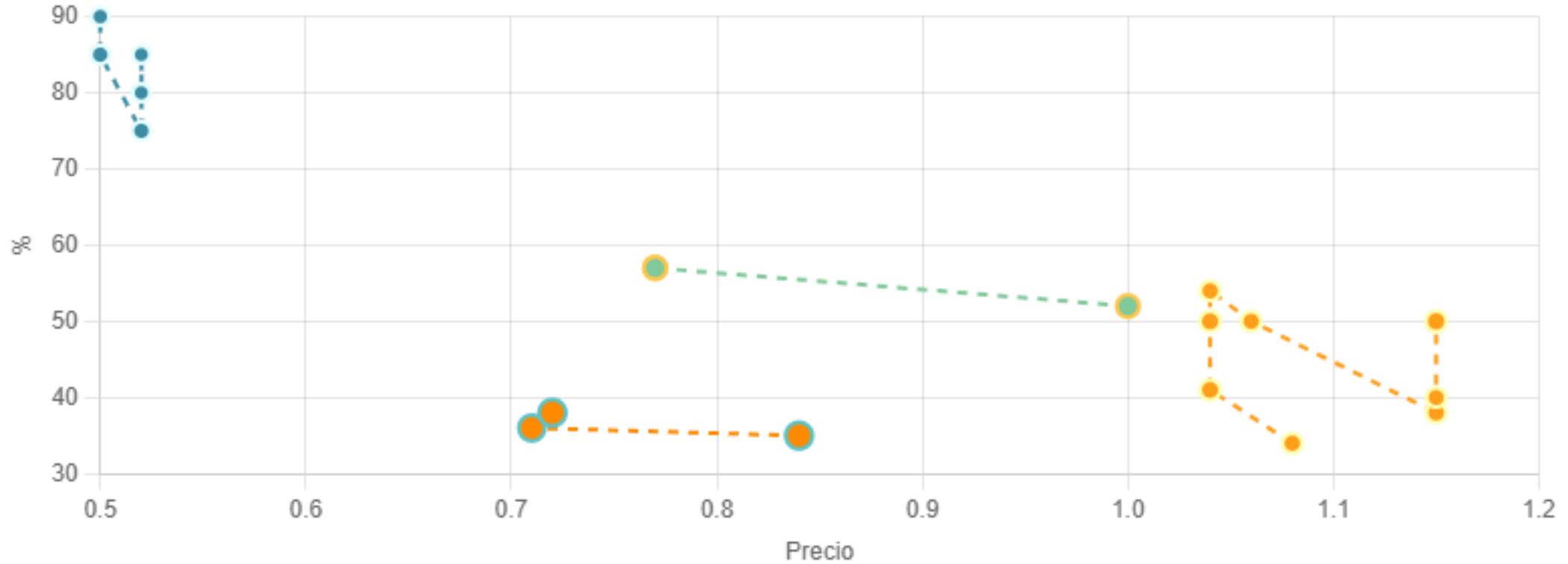
Precio y uso de semilla certificada



- Bolivia
- Costa Rica
- México
- República Dominicana
- Argentina
- Brasil
- Chile
- Nicaragua
- Perú
- Uruguay



Precio y uso de semilla certificada

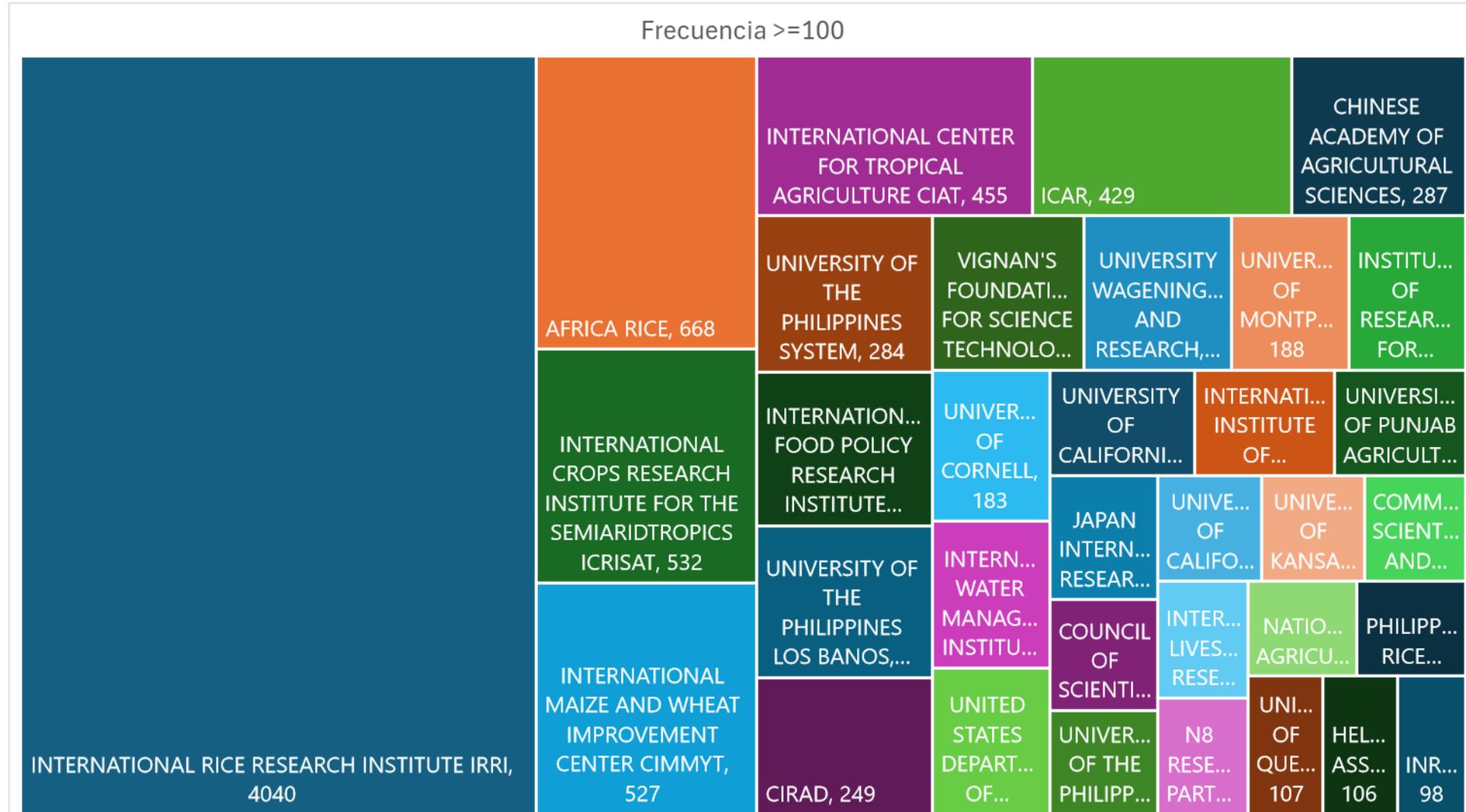


-  Bolivia
-  Bolivia
-  Costa Rica
-  Costa Rica
-  México
-  México
-  República Dominicana
-  República Dominicana
-  Argentina
-  Argentina
-  Brasil
-  Brasil
-  Chile
-  Chile
-  Nicaragua
-  Nicaragua
-  Perú
- Perú
- Uruguay
- Uruguay



Conocimiento generado en investigación

Un total de
 7,378
 publicaciones
 de 1,522
 instituciones
 (1972-2023)

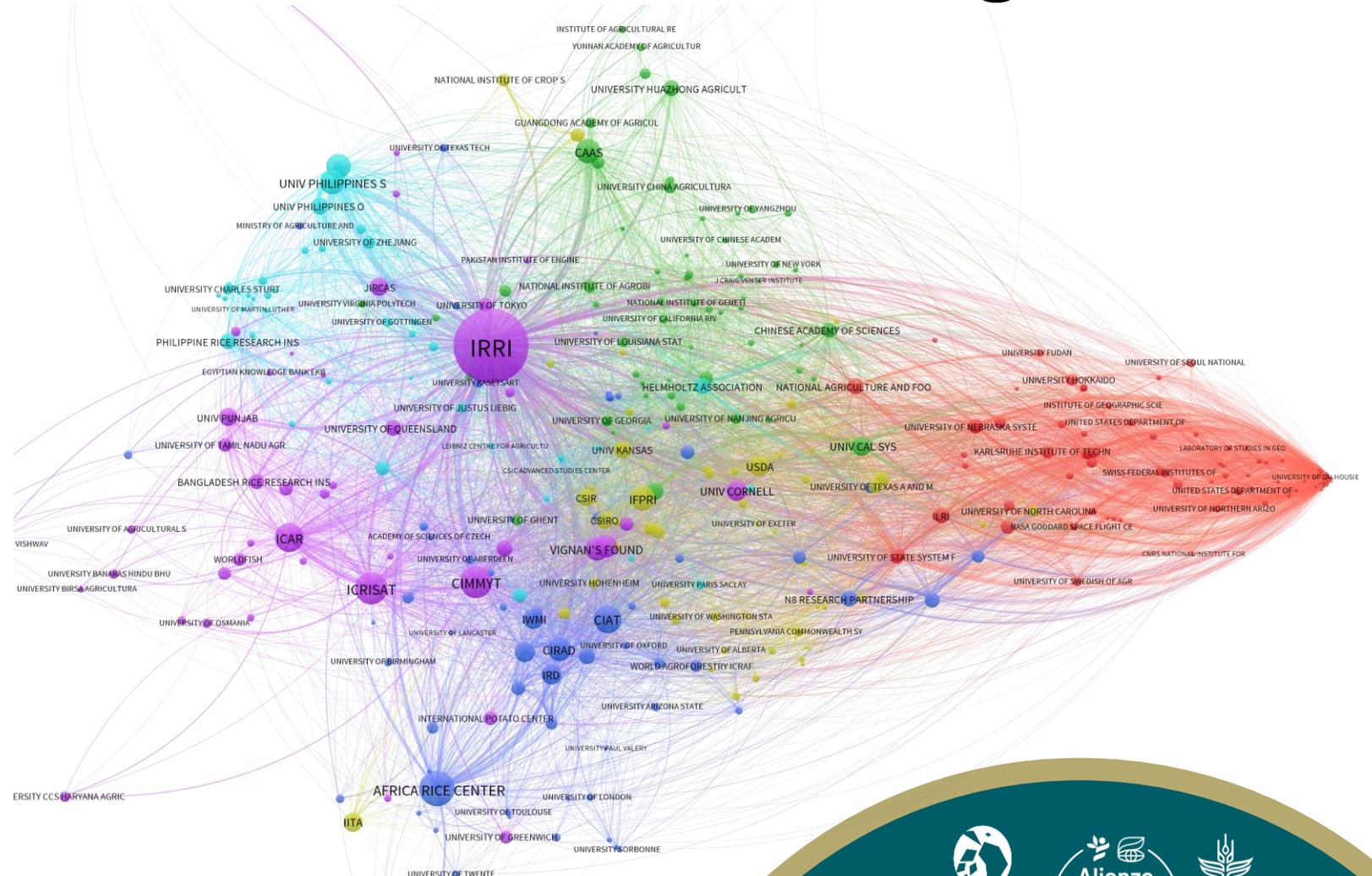




Interacción de instituciones de investigación

Un total de 7,378 publicaciones de 1,522 instituciones (1972-2023)

Network explorer



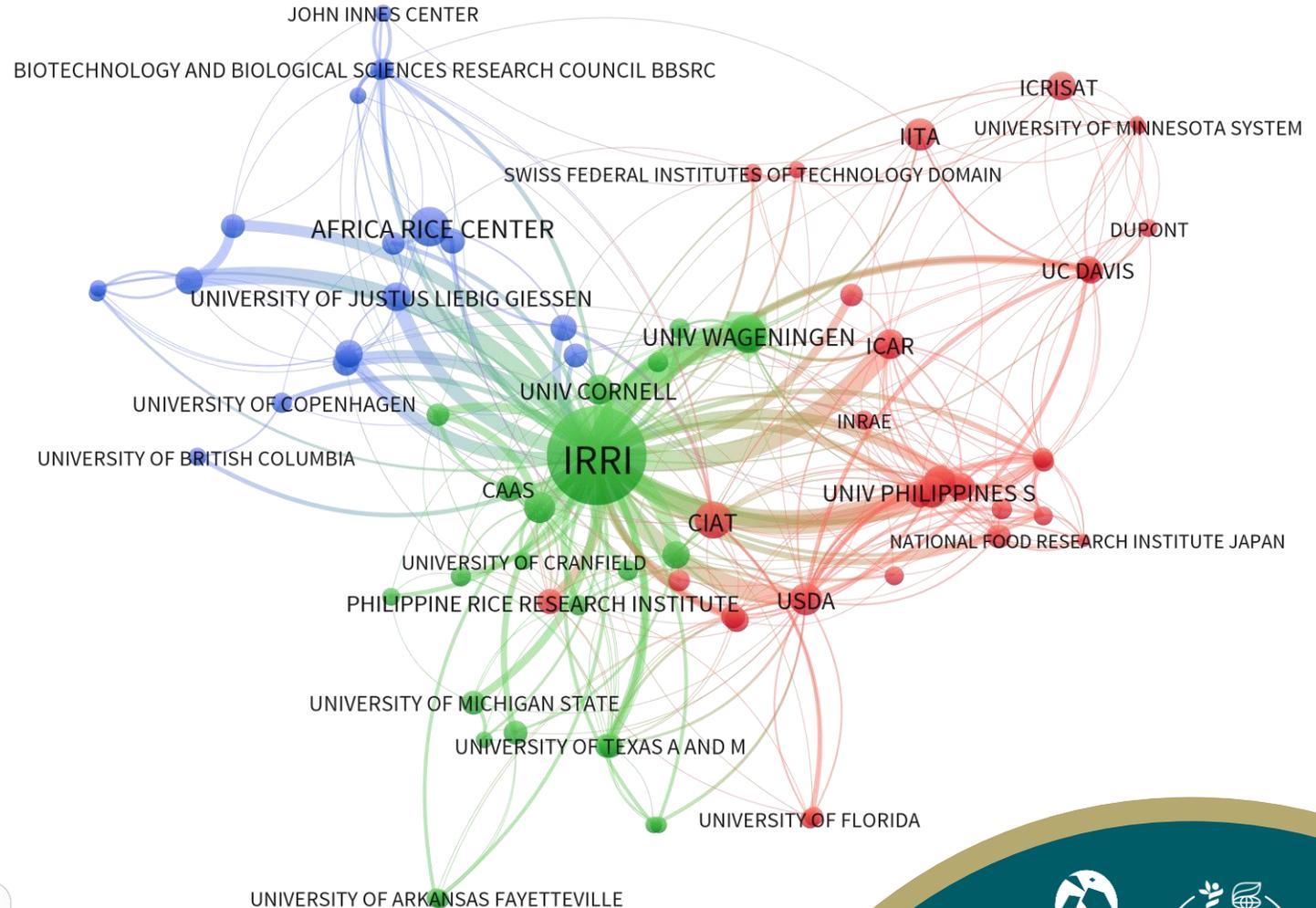
Hoyos Bertin, N.; Orjuela Ramirez, G.A.; Esponda Bernal, M.D.M.; Rivera Vasco, T.C.; Andrade Lopez, R.S. (2024) CGIAR Web-of-science publications dataset. <https://doi.org/10.7910/DVN/Z1JFZ9>





Interacción de instituciones de investigación

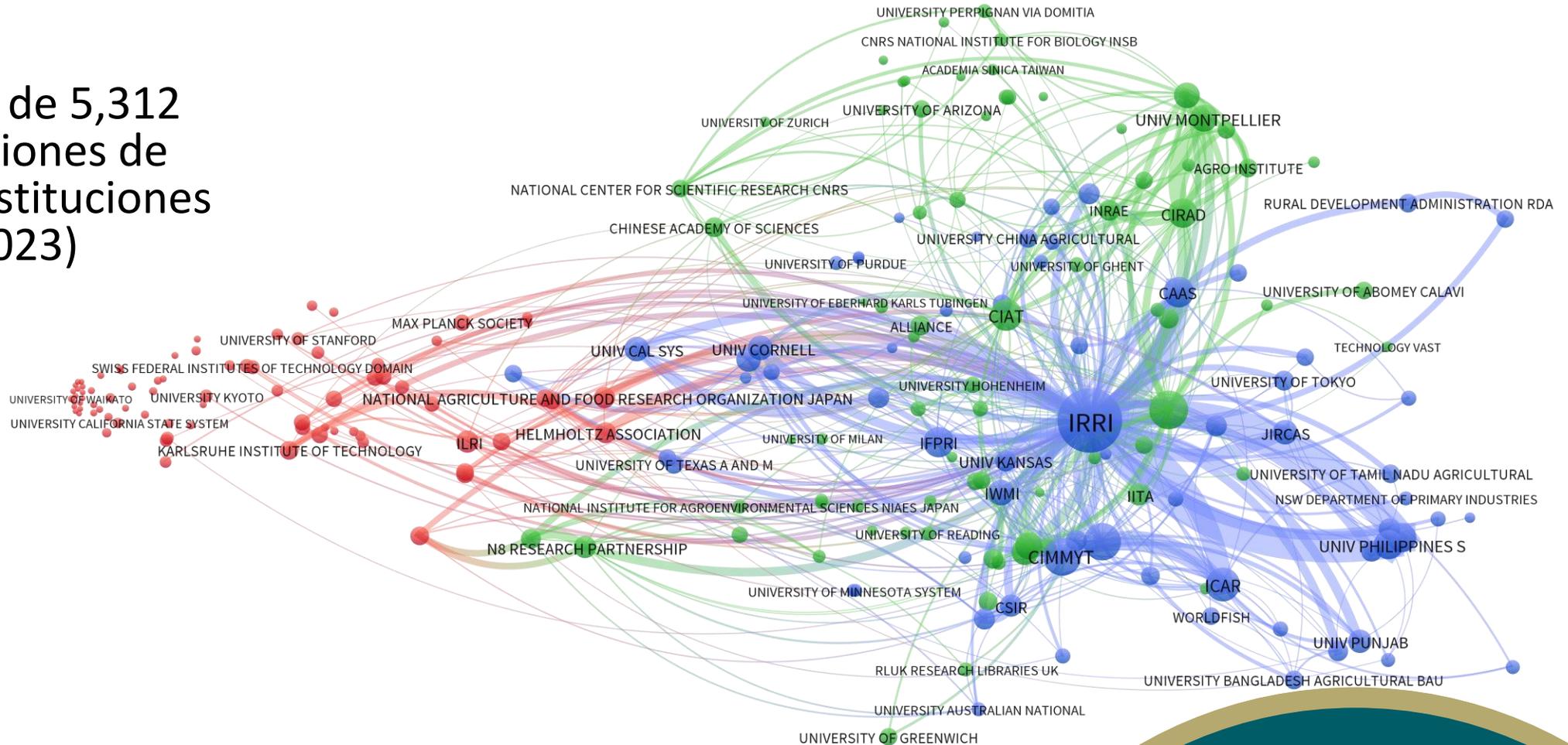
Un total de 1,851 publicaciones de 271 instituciones (1981-2000)





Interacción de instituciones de investigación

Un total de 5,312 publicaciones de 1,501 instituciones (2001-2023)





Temas en marcha

Información adicional

- Información de los programas de mejoramiento y bancos de germoplasma
- Información desagregada a niveles administrativos reducidos
- Aprovechar las iniciativas en marcha del CGIAR

Alianzas y más cultivos

- Extender la iniciativa a otros cultivos y conectarlo con socios locales e internacionales
- Aprovechar proyectos en marcha para conectar socios locales

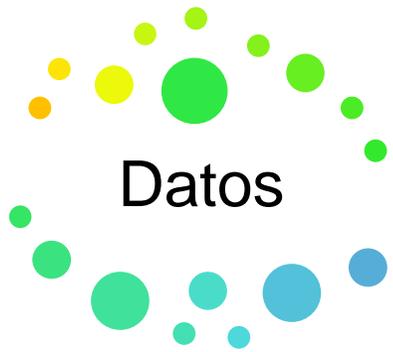


Consideración Final



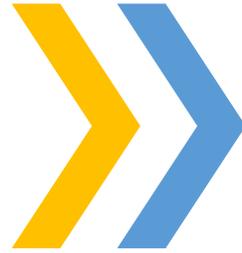
Observatorios de cultivos - consideraciones

1.



Datos

Información



Conocimiento

Decisiones

2.



<https://www.riceobservatory.org/>



Rice
OBSERVATORY





Muchas Gracias

Robert Andrade

Prospectivas y Economía Aplicada

Foresight and Applied Economics

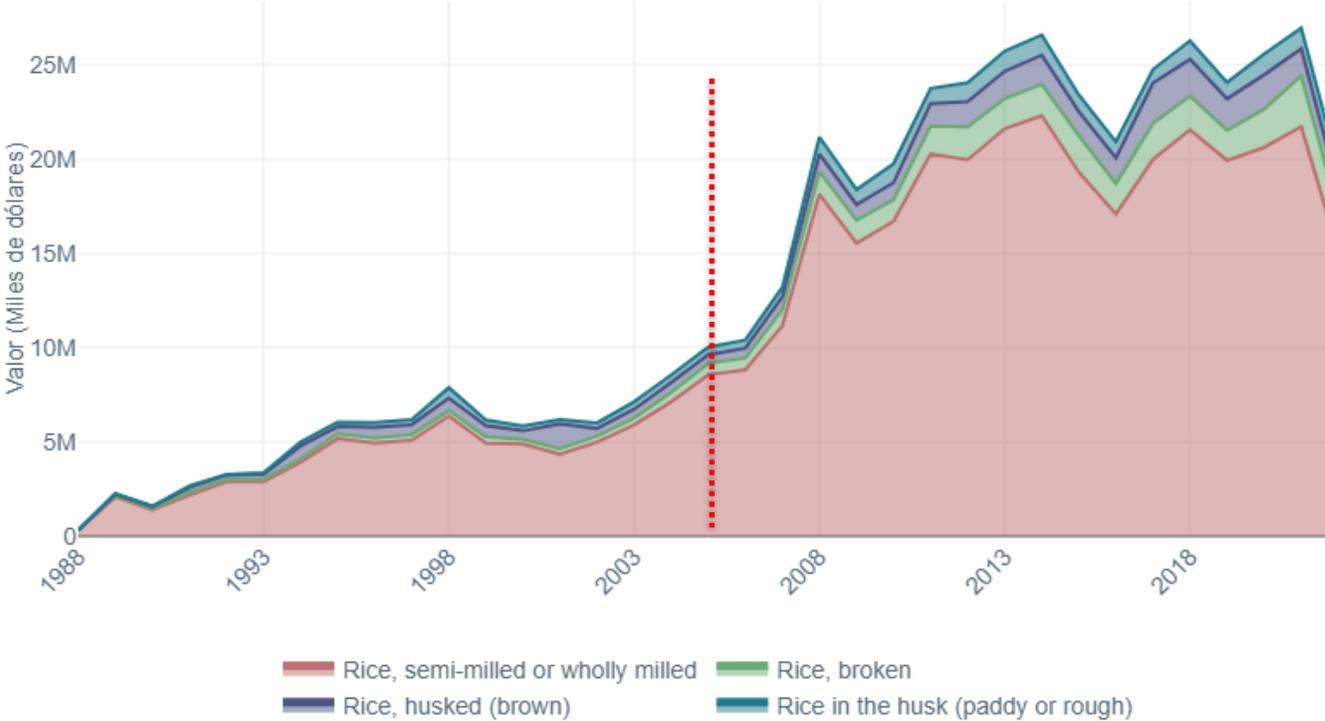
r.s.andrade@cgiar.org





Valor de las importaciones

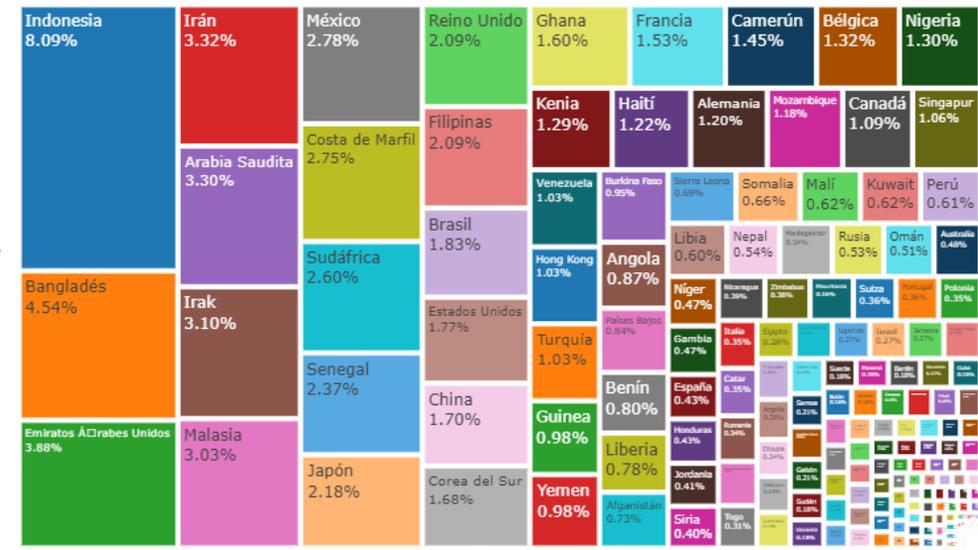
Valor de las importaciones por tipo de arroz



2021
27.3M

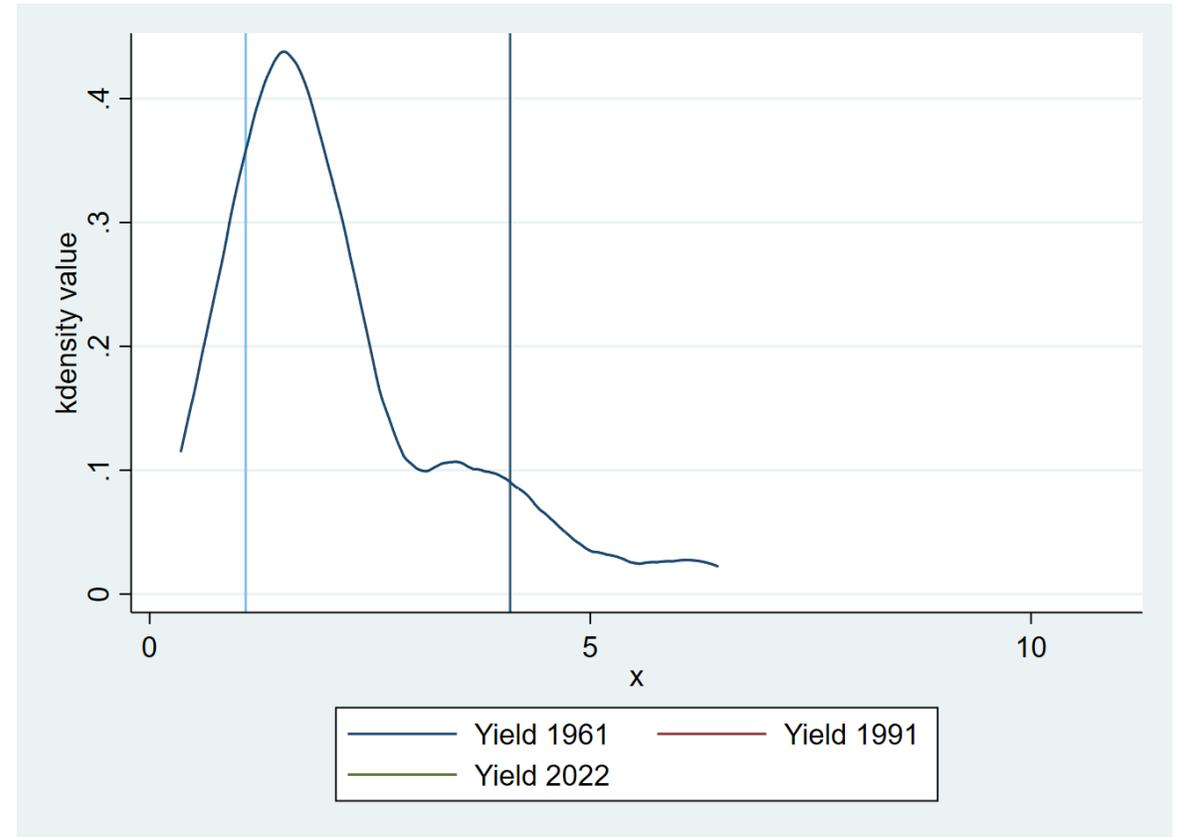
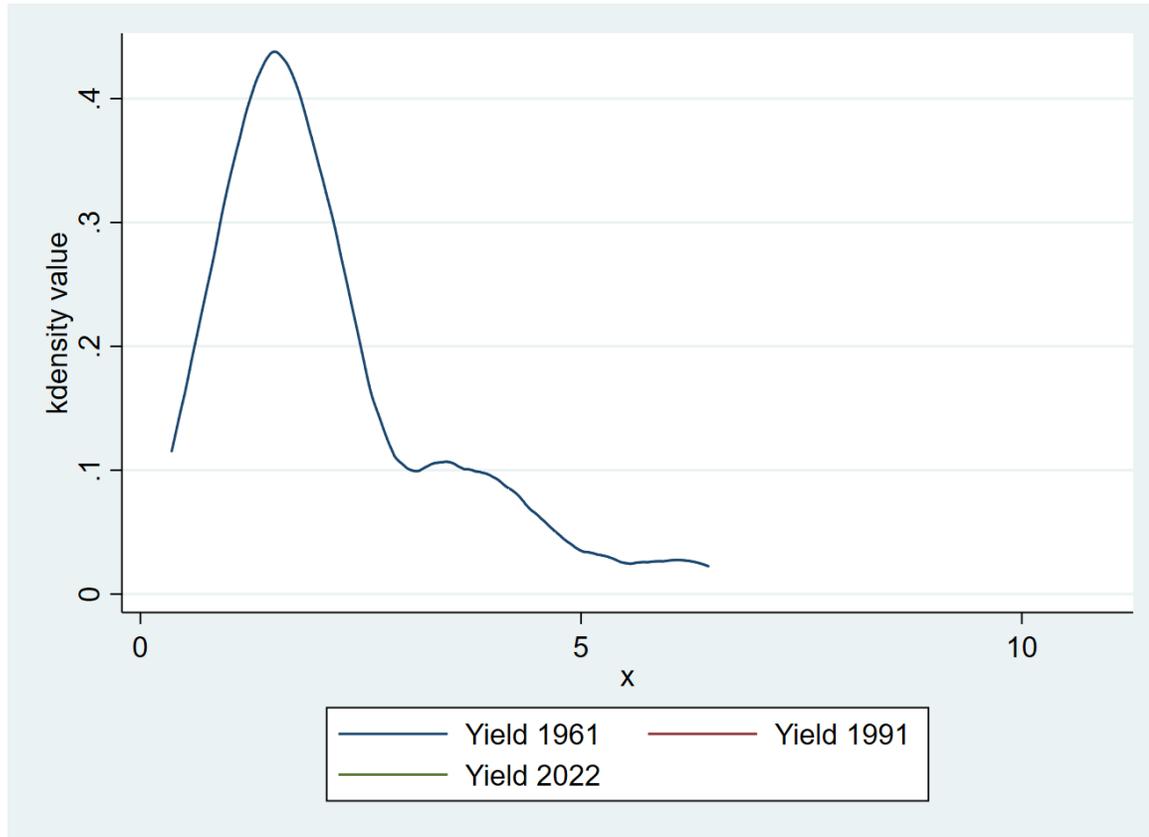


2011
23.8M



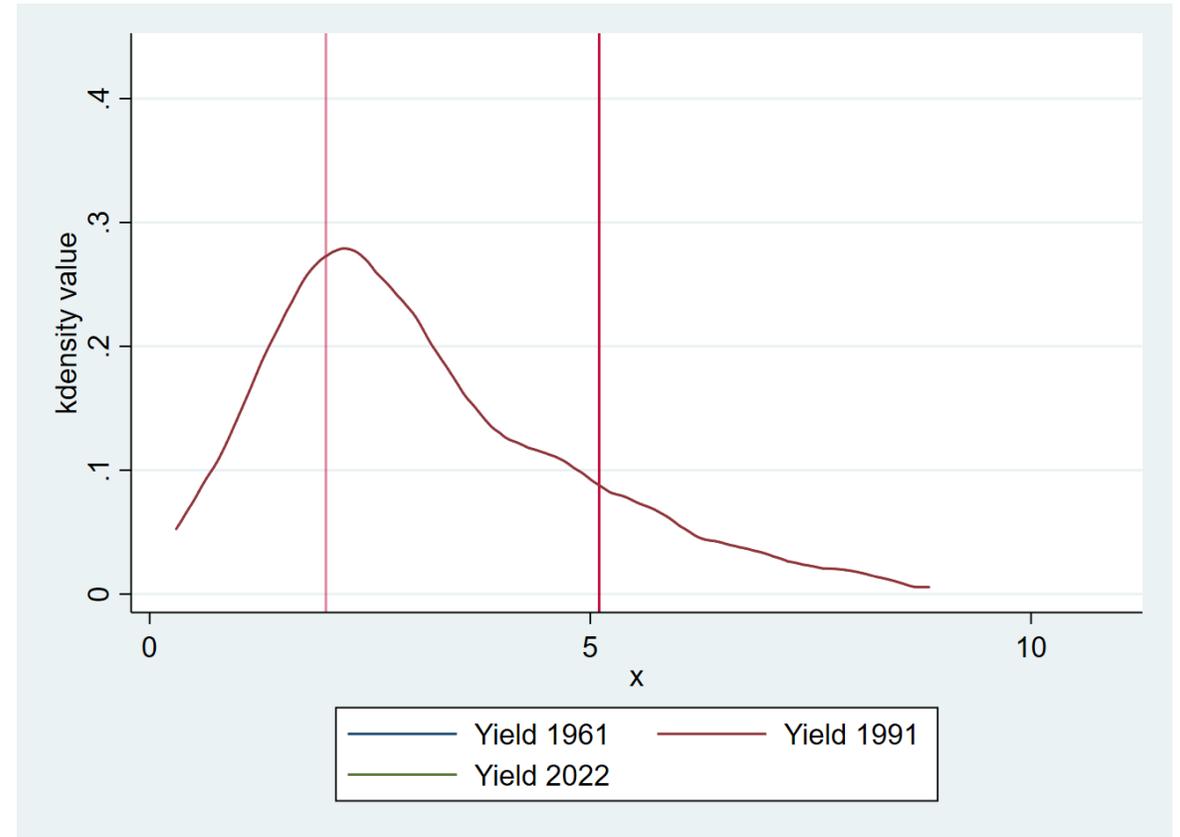
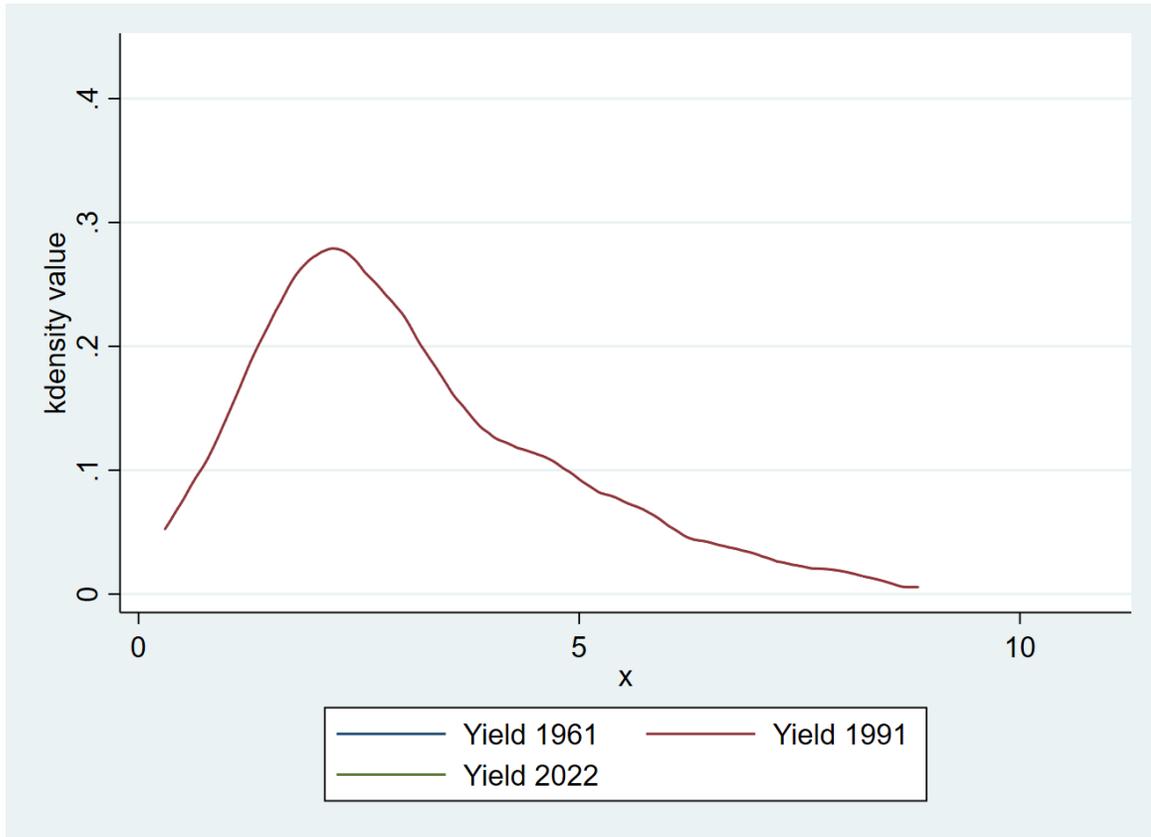


Comparador estadístico de rendimientos



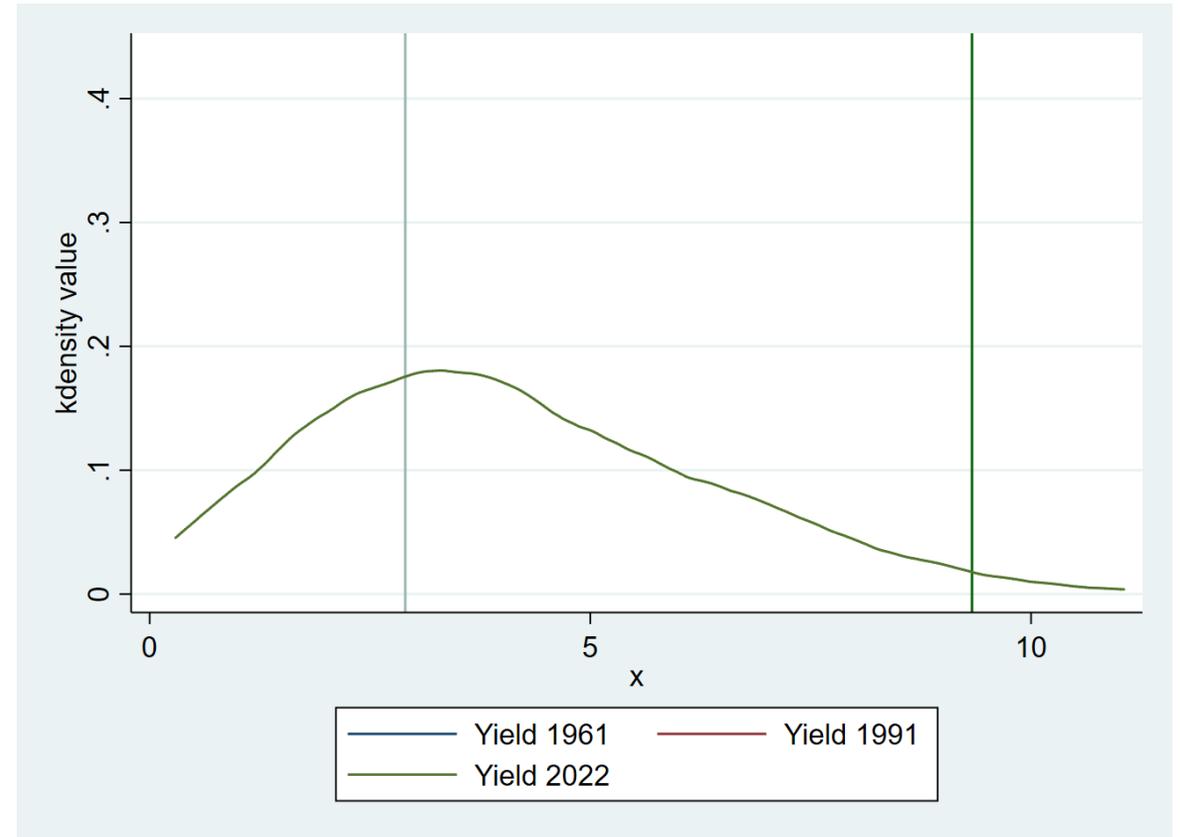
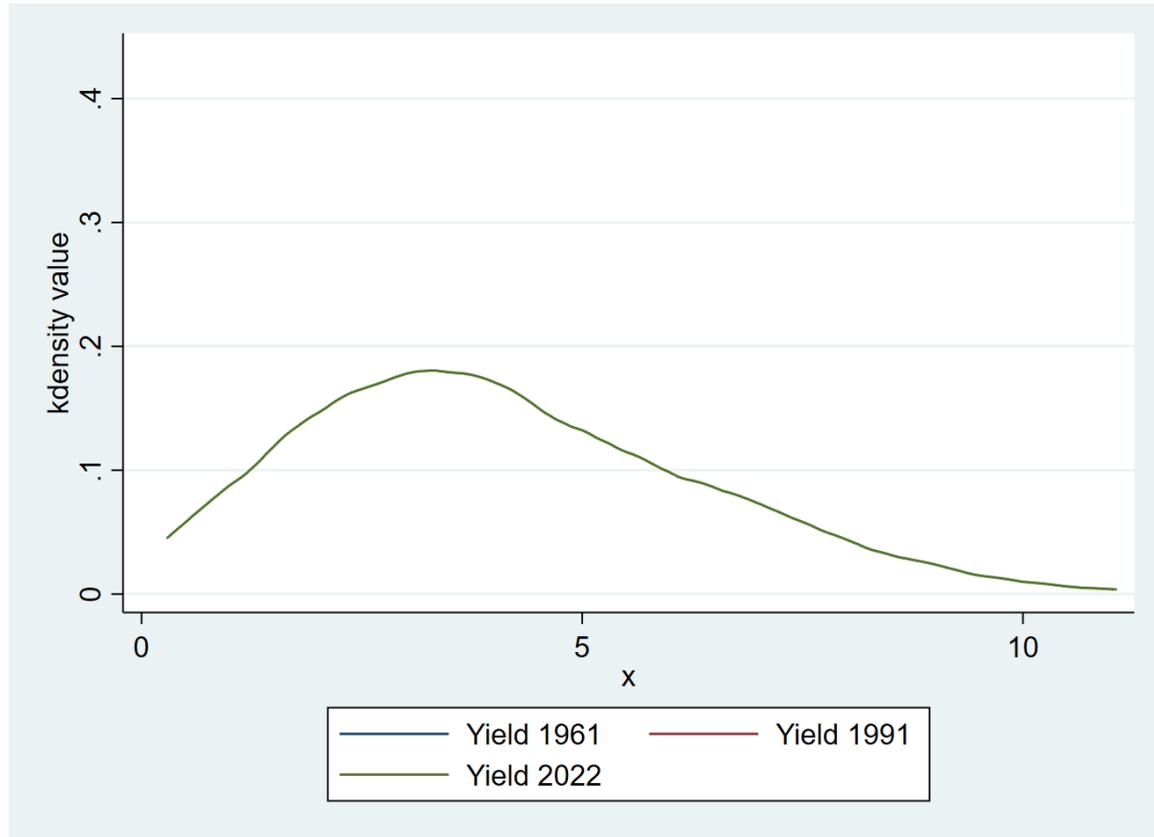


Comparador estadístico de rendimientos



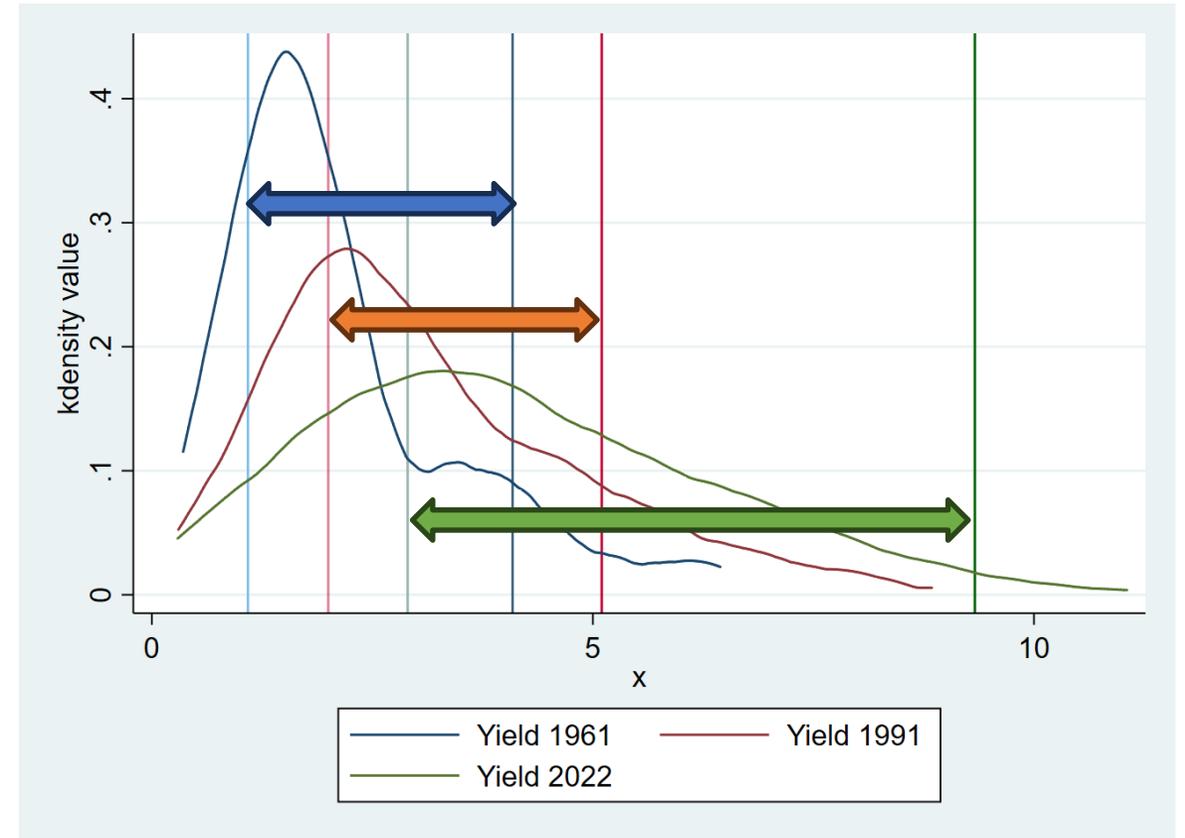
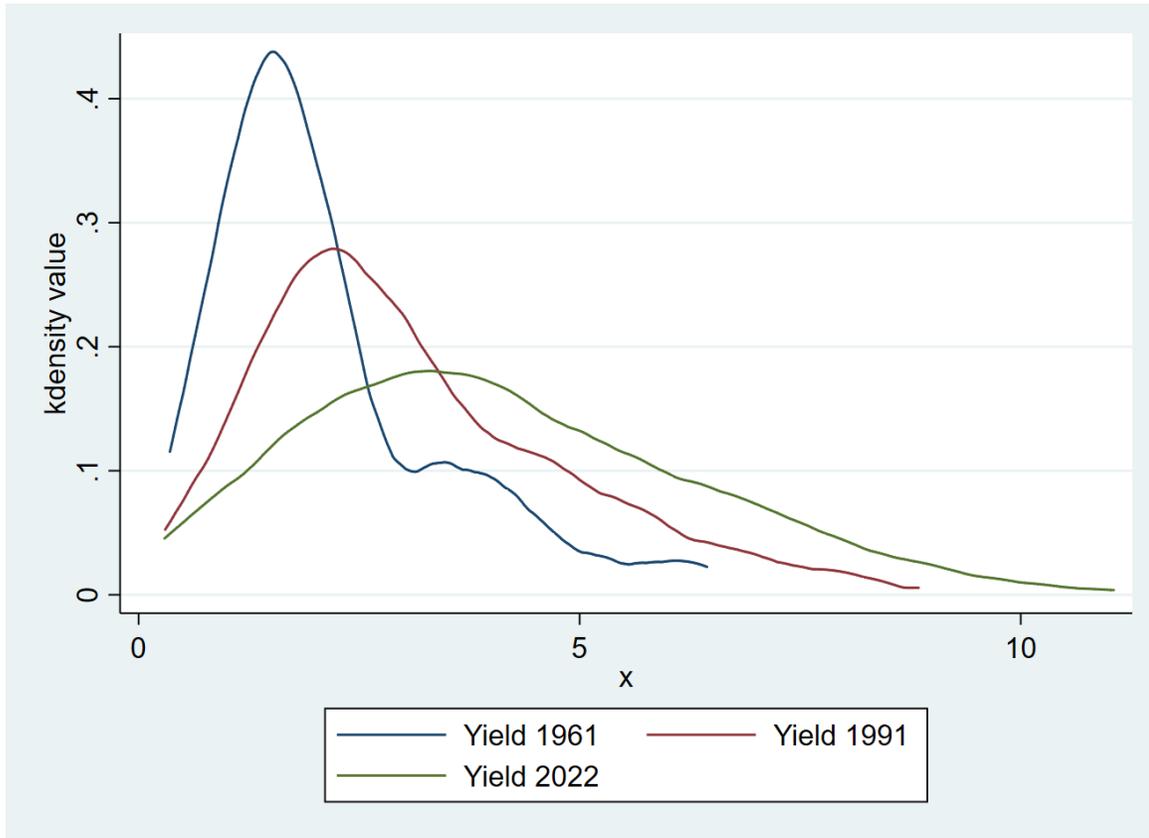


Comparador estadístico de rendimientos





Comparador estadístico de rendimientos





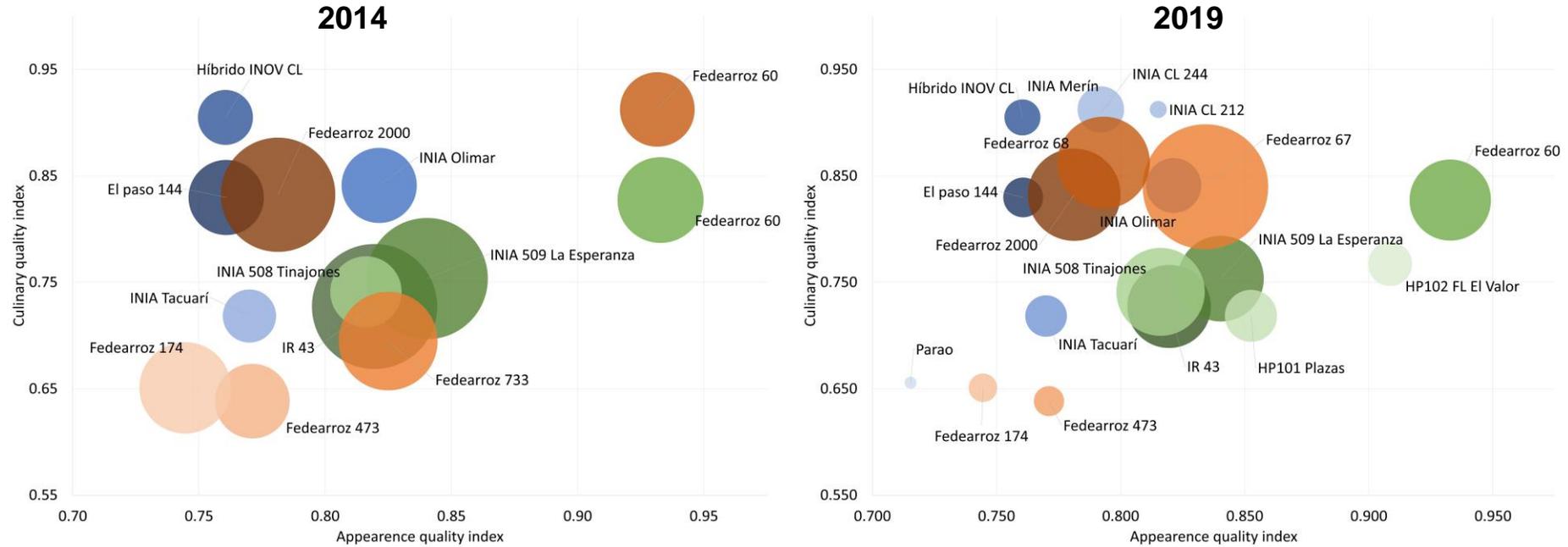
Adopción de variedades y otras características

Where Is My Crop? Data-Driven Initiatives to Support Integrated Multi-Stakeholder Agricultural Decisions

Robert Andrade^{1*}, Sergio Urzosté^{1,2}, Tatiana Rivera¹, Benjamin Schiek¹, Fridah Nyakundi³, Jesse Vergara^{4,5}, Leroy Mwanza⁶, Katherine Loaiza⁷, and Carolina Gonzalez⁸

Globally, there has been an explosion of data generation in agriculture. With such a deluge of data available, it has become essential to create solutions that organize, analyze, and visualize it to gain actionable insights, which can guide farmers, scientists, or policy makers to take better decisions that lead to transformative actions for agriculture. There is a plethora of digital innovations in agriculture that implement big data techniques to harness solutions from large amounts of data, however, there is also a significant gap in access to these innovations among stakeholders of the value chains, with smallholder's farmers facing higher risks. Open data platforms have emerged as an important source of information for this group of producers but are still far from reaching their full potential. While the growing number of such initiatives has improved the availability and reach of data, it has also made the collection and processing of this information more difficult, widening the gap between those who can process and interpret this information and those who cannot. The Crop Observatories are presented in this article as an initiative that aims to harmonize large amounts of crop-specific data from various open access sources to build relevant indicators for decision making. Observatories are being developed for rice, cassava, beans, plantain and banana, and tropical forages, containing information on production, prices, policies, breeding, agronomy, and socioeconomic variables of interest. The Observatories are expected to become a lighthouse that attracts multi-stakeholders to avoid "not see the forest for the trees" and to advance research and strengthen crop economic systems. The process of developing the Observatories, as well as the methods for data collection, analysis, and display, is described. The main results obtained by the recently launched Rice Observatory (www.riceobservatory.org), and the about to be launched Cassava Observatory are presented, contextualizing their potential use and importance for multi-stakeholders of both crops. The article concludes with a list of lessons learned and next steps for the Observatories, which are also expected to guide the development of similar initiatives. Observatories, beyond presenting themselves as an alternative for improving data-driven decision making, can become platforms for collaboration on data issues and digital innovations within each sector.

Keywords: agricultural indicators, open-access datasets, cassava, rice, Crop Observatories



Uruguay

Peru

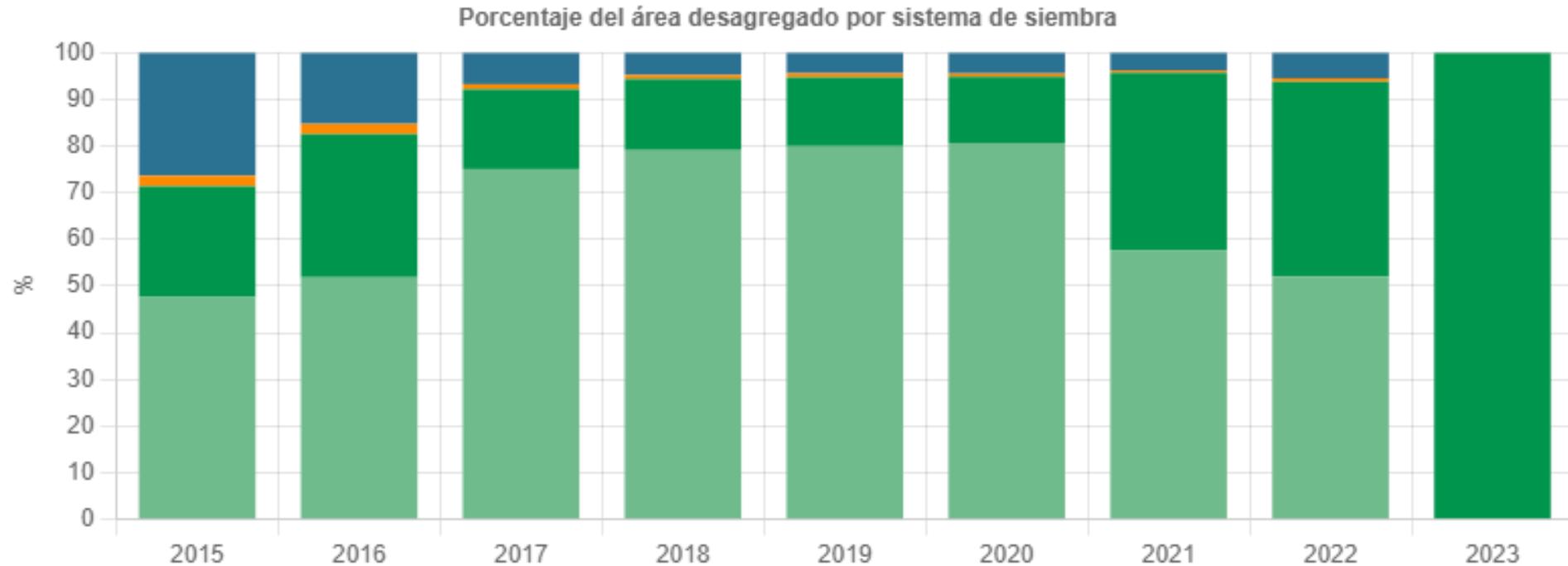
Colombia



Andrade, R., et al. "Where is my crop? Data-driven initiatives to support integrated multi-stakeholder agricultural decisions." *Frontiers in Sustainable Food Systems* 5 (2021): 737528.



Sistemas de siembra y segmentos de mercado



■ Porcentaje del área con semilla pregerminada de arroz riego

■ Porcentaje del área con semilla seca con sembradora de arroz riego ■ Porcentaje del área con otro sistema de arroz riego. ¿Cuál?

■ Porcentaje del área con transplante de arroz riego



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