



Agricultural digital decision support tools: a landscape analysis

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CABI in brief

Not-for-profit intergovernmental organization, established by a United Nations treaty-level agreement

Owned by **49 Member Countries** which have an equal role in the organization's governance, policies and strategic direction

Global reach – 450+ staff across more than 20 locations worldwide

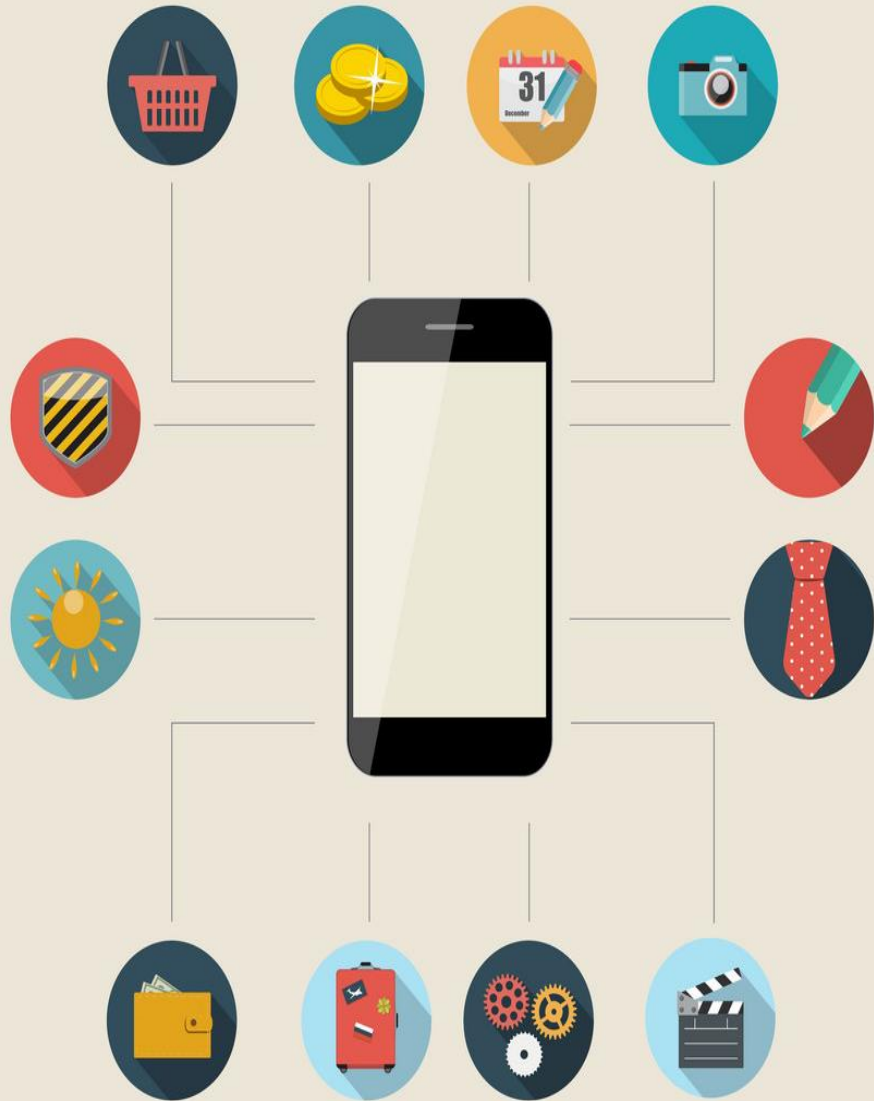
Addresses issues of global concern such as food security and food safety through **research and international development cooperation**

Major publisher of scientific information – books, ebooks, digital learning, compendia and online information resources

Millions of apps available for almost everything?

- Google Play store 3.48 million apps, Apple App Store 2.22 million, but identifying the best app or web-based applications for specific needs in agriculture is very difficult
 - Google and Apple online stores use generic categories (classifications) and keyword tags (maximum of five tags for Play Store apps) to filter apps
 - For example, the Google Play Store uses: productivity, business, education, tools, books & reference, communication and weather related to agriculture
 - Play stores restrict searches to 250 apps in any one search

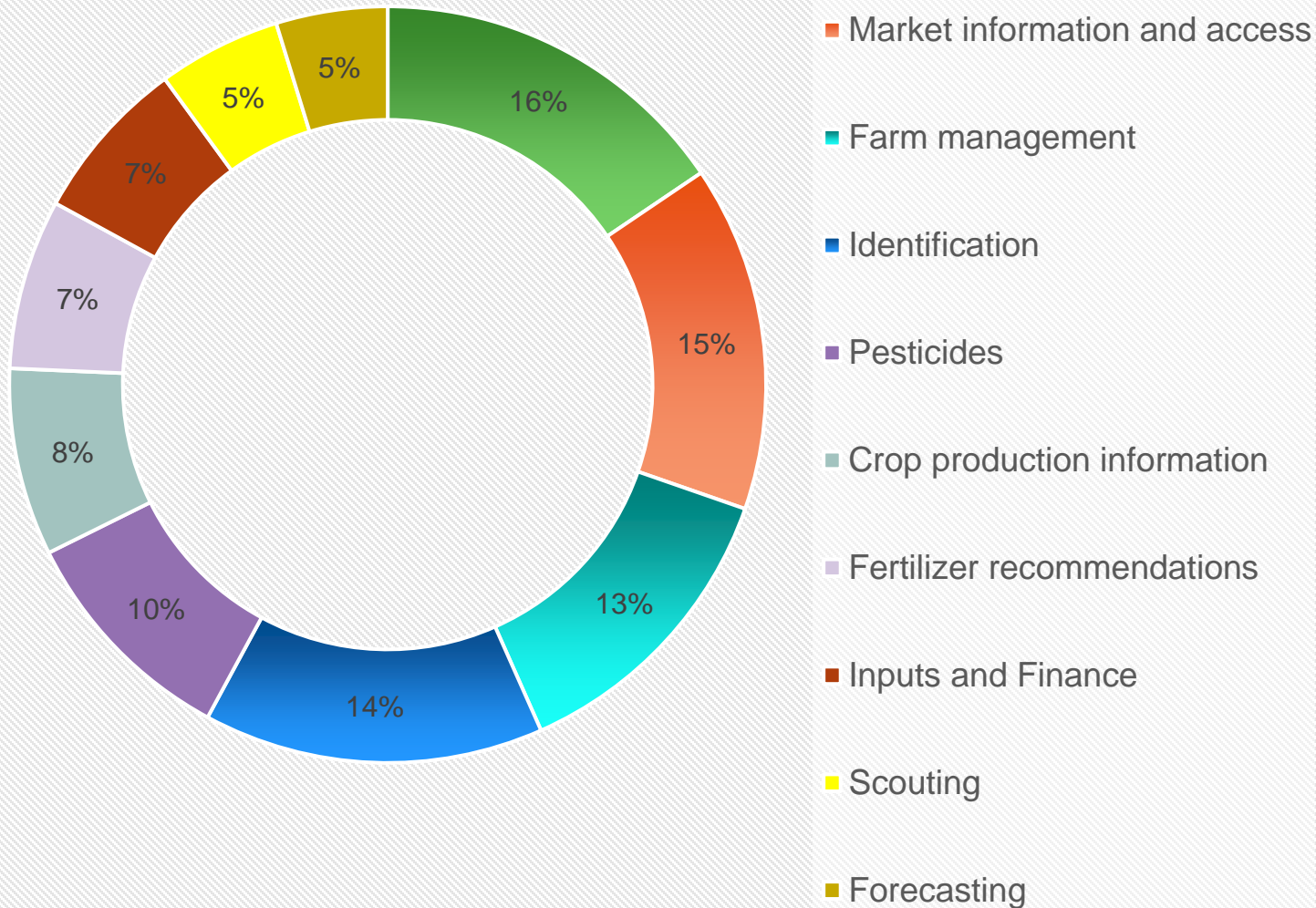




Identifying apps designed to assist in crop production

- In a first step, we conducted a landscape analysis to identify apps and web-based applications that are designed to assist in crop production, serving the needs of public and private-sector agricultural advisors who are critical sources of information and guidance for farmers
- The review involved the characterization of each agricultural app or web-based tool identified (crop/country focus; language; online/offline capabilities; user rating; etc)
- We developed an open access website to streamline this search process for public and private agricultural advisors, growers and other stakeholders interested in crop production decision support tools

Breakdown of app categories



Landscape analysis

Hundreds of tools (apps and websites), were identified and catalogued in a data management system with their characterization details

- Over 400 apps have been characterized, covering 10 broad subject matter categories (see figure on left)
- Additionally, 193 websites equipped with agricultural decision support tools were recorded



Landscape analysis (continued)

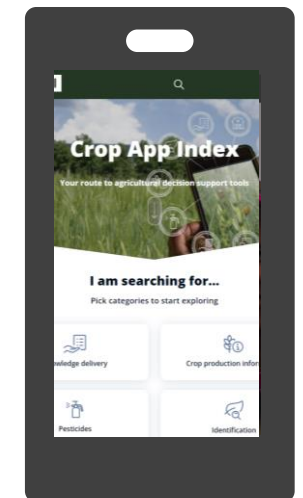
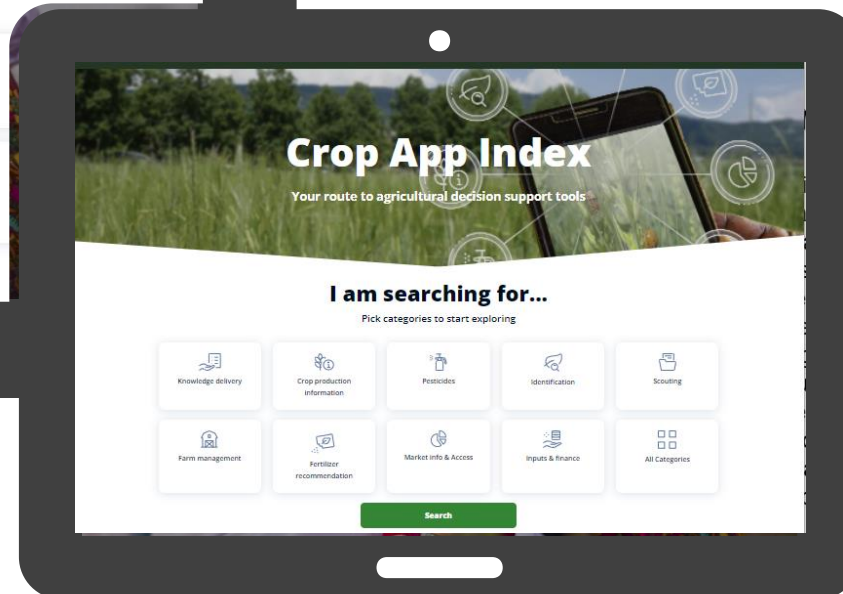
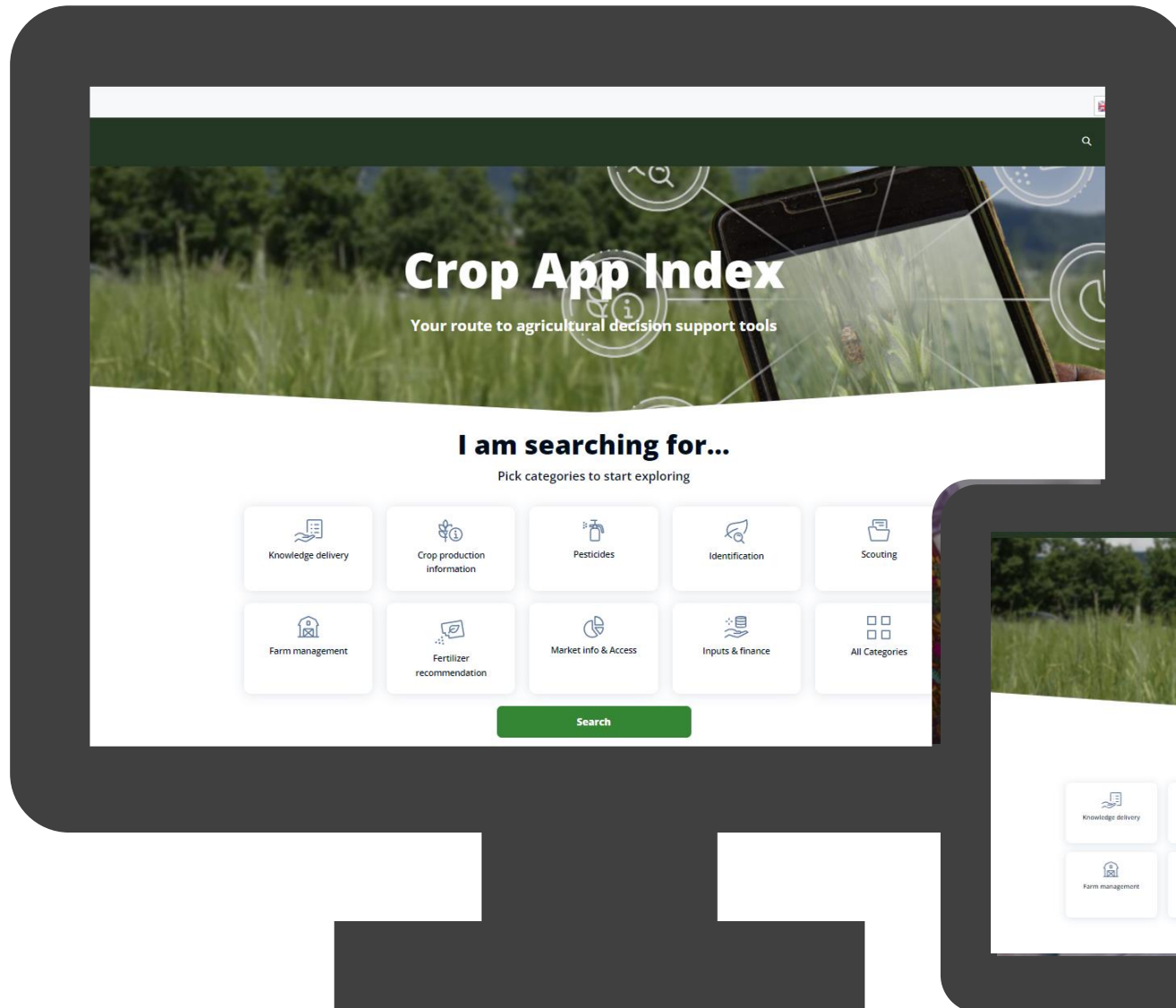
- The majority of apps were developed solely for the Android platform compared to a small fraction developed exclusively for iOS
 - 37% of apps were available on both platforms
- Android devices, are cheaper and far more widely available (in particular in developing countries); they are responsible for more than 80% of the market share in Africa and Asia (www.statista.com)
- Most apps (80%) could be accessed for free (no cost to users). Of the remaining apps some were subscription-based whereas others offered a “freemium” model, where the basic app is free to download, but more advanced features require a monthly subscription
- Similar results were also noted by Costopoulou et. al. (2016), Karthikeyan and Kumar (2019) and Barbosa et. Al. (2020) in surveys undertaken of agricultural apps

Costopoulou, C., Ntaliani, M. & Karetsos, S. (2016). Studying Mobile Apps for Agriculture Informatics Laboratory, Department of Agricultural Economics and Development, Agricultural University of Athens, Greece IOSR Journal of Mobile Computing & Application (IOSR-JMCA)e-ISSN: 2394-0050, P-ISSN: 2394-0042, vol. 3, no. 6, pp. 44-49.

Kumar, S.A. and Karthikeyan, C.(2019).Status of mobile agricultural apps in the global mobile ecosystem. International Journal of Education and Development using Information and Communication Technology (IJEDICT), 15(3), 63-74

Barbosa, Julierme & Prior, Stephen & Pedreira, Guilherme & Motta, Antonio & Poggere, Giovana & Goularte, Gabriel. (2020). Global trends in apps for agriculture. Multi-Science Journal. 3. 16-20. 10.33837/msj.v3i1.1095

www.croppappindex.org
launched in February 2022,
comprising >400 apps and
website tools relevant to crop
production (updated
automatically and regularly).



Crop App Index

Your route to agricultural decision support tools

I am searching for...

Pick categories to start exploring



Knowledge delivery



Crop production
information



Pesticides



Identification



Scouting



Farm management



Fertilizer
recommendation



Market info & Access



Inputs & finance



All Categories

Search



The Crop App Index pulls in apps and websites relevant to crop production and the additional information added by CABI makes it easier for users to find agricultural decision support tools

Crop App Index functionality

- Allows users to search both the Apple and Google play stores simultaneously
- Browse by category or search for what you need
- Refine results using relevant and useful filters such as country, language and crop
- View a description and other useful details about each tool
- Click the tool to visit the website or to download the app
- Translation option
- Currently 430 tools available and growing

Filter ✕ Clear all

Keyword search...

Category

Select

Country

Select

Language

Select

Crop

Select

Type

☒ All devices(121)

☐ Website(0)

☐ Apple Store(7)

☐ Google Play(114)

121 results found



365Crop
365FarmNet GmbH

The 365Crop app enables you to document crop production measures, from tilling to harvest, directly as they happen. Even offline you can record your crop production measures and view these as well as your field maps and various analyses on the move with great clarity. You can network with as many employees or family members as you like, create plans for each other and keep tabs on al...

Crop production information • Farm management

English

Google Play



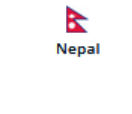
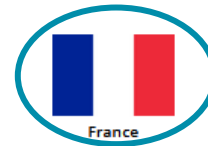
www.bioprotectionportal.com



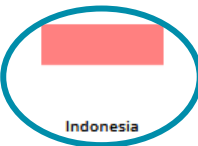
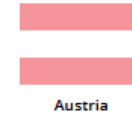
Update on CABI BioProtection Portal

- A free online resource that enables users to correctly identify, source and apply registered biocontrol and biopesticide products against agricultural pests
- Also provides general information on biological control and IPM via blogs and other resources
- Launched in February 2020
- Now live in 31 countries with more in pipeline – aiming for ~40 countries by the end of 2022
- Available in local languages and English
- Online and offline versions available
- >3,600 registered products in database
- >700,000 users since launch

Countries on portal



Coming soon



In discussion

- The Netherlands
- Malaysia
- New Zealand
- Vietnam
- China
- Lao PDR
- PNG
- South Africa



The CABI BioProtection Portal

- Multiple potential users:
 - **Growers and advisors** who need current and reliable information, on-demand, regarding the availability and correct use of effective, lower toxicity products that are registered locally and meet market/export standards
 - **National authorities responsible for regulation/registration of plant protection products** who require information on registered products in neighbouring countries
 - **Biocontrol manufacturers** looking to promote wider uptake of their products and identify new markets

Permission to use national governmental datasets

- Information is sourced directly from **national governments' lists** of registered plant protection products
- **Permission is always requested from the national authority** responsible for the registration of plant protection products to use the data set, and **links to the authority websites** are displayed on the portal



How does it work?

- Navigate to desired country homepage and select language, occupation, crop and/or pest

The screenshot displays the CABI BioProtection Portal homepage for Kenya. The header includes the CABI logo, the site name, and navigation links. The main banner features a woman in a greenhouse with the text 'Find bioprotection products in Kenya'. Below this, a yellow box highlights the selection area with the text 'Select language, occupation, crop and/or pest'. Four yellow arrows point to the selection dropdowns: 'English', 'Advisor', 'French bean', and 'Select Pest'. The 'Select Pest' dropdown is open, showing a list of pests including African bollworm, Aleurothrixus floccosus, Angular leaf spot, Anthracnose, and Aphid. An orange 'Find product' button is visible. A 'Learn more' button is located at the bottom right. A small note states 'Product information available in English'.

English × ✓ Advisor × ✓ French bean × ✓ Select Pest ✓

Find product

Product information available in English


A free tool to enhance the awareness and uptake of biocontrol and biopesticide products by growers and advisors

web based tool that enables users to discover and biopesticide products around the world.

Learn more

Product search results

- Search results display **all registered products** in a given country for a selected crop-pest combination

 CABI BioProtection Portal


Countries ▾ News & Information Partners Resources Go Offline About ▾ Contact Us ▾


Find bioprotection products for Kenya

Discover which biocontrol and biopesticide products are registered for use



Your product search can include crops, pests or both

English ▾ Advisor ▾ French bean x ▾ Select Pest ▾ [Find Product](#)

 Product information is available in English

 This biological product has been registered for use in Kenya by the [Pest Control Products Board of Kenya](#)

47 results

 Filter by Active ingredient ▾  Sort by ▾

Trianum-P

Active ingredient :

- Trichoderma harzianum

Registrant : Koppert Biological Systems (K)

★ Partner Product

PREV-AM

Active ingredient :

- Orange oil

Registrant : Oro Agri

★ Partner Product

Achook

Active ingredient :

- Azadirachtin

Registrant : Godrej Agrovet

Pyretone EC

Active ingredient :

- Pyrethrin

Registrant : Maj-Chemie

Flower DS

Active ingredient :

- Pyrethrin

Registrant : KAPI

Real Phytoseiulus

Active ingredient :

- Phytoseiulus persimilis

Registrant : Real IPM Company (K)

Select product for detailed information



Detailed product information

- Detailed product information includes **details of registrant, local product distributor, product safety, application, additional uses, etc.**

CABI BioProtection Portal

Countries ▾ News & Information Partners Resources Go Offline About ▾ Contact Us ▾

◀ Back to Search results

Product last updated: 03/05/2022

Triatum-P

This biological product has been registered for use in Kenya by the [Pest Control Products Board of Kenya](#)

Registration Number PCPB(CR)1024	Category Microbial	Registrant Koppert Biological Systems (K)	Manufacturer Koppert Biological Systems (K)	Active ingredient Trichoderma harzianum
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Product Information

- Label
- Safety datasheet
- Product factsheet

View label, SDS and product factsheet (where available)

Distributor Details

<https://www.koppert.co.ke/>

Koppert Biological Systems (K)
Apex Business Park
Unit 6, Mombasa Road. P.O. Box 41852
Kenya Nairobi

+254731202191 info@koppert.co.ke

Contact local product distributor

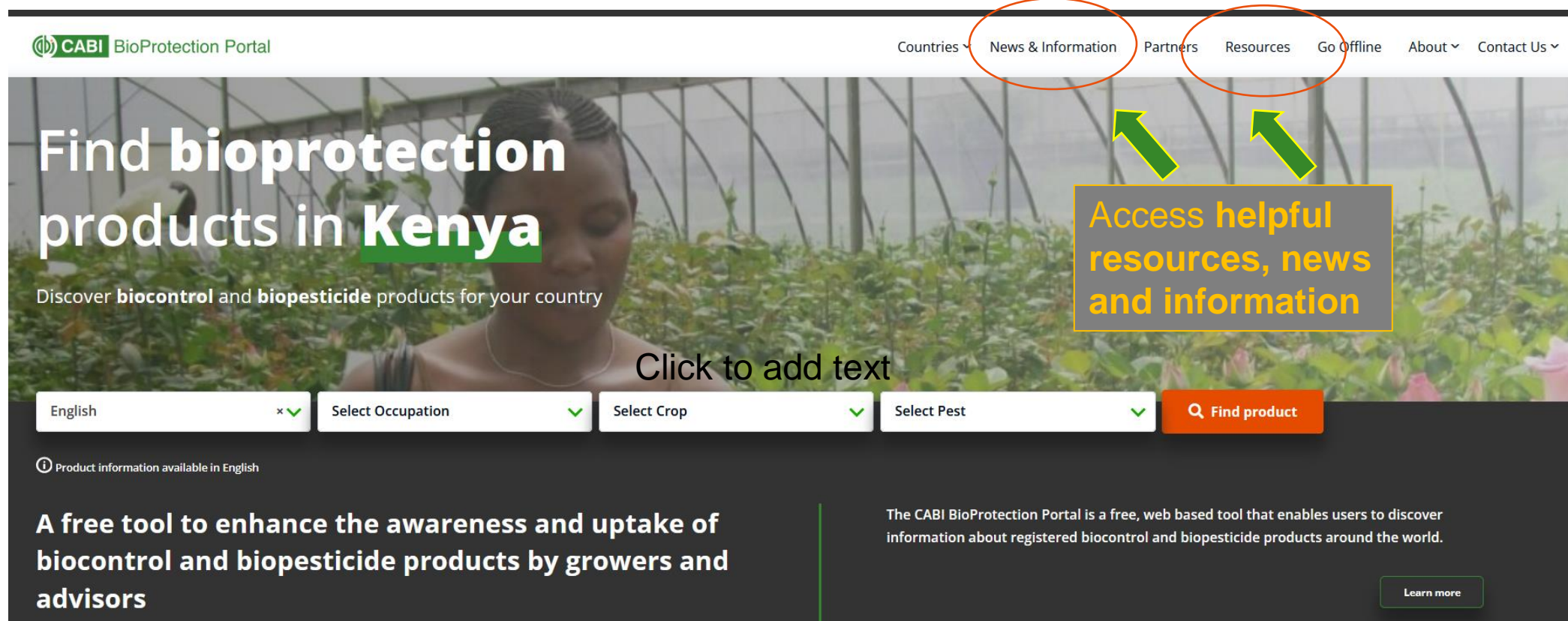
Other permitted uses

View by Crop ☐ View by Pest ☒

▶ Carnation
▶ French bean

Pre-harvest Interval
0h

Access to information on biocontrol and IPM



- **Growers and advisors** can find **general information on biological control and IPM** via a series of **blogs** and a collection of **relevant information and links**
- **Crop-specific resources section** in the pipeline for 2022

Funding mechanism to guarantee open access

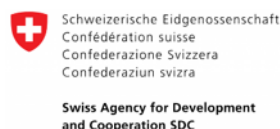
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Please don't hesitate to contact Ulli Kuhlmann: u.kuhlmann@cabi.org

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Agriculture and
Agri-Food Canada



Ministry of Foreign Affairs of the
Netherlands



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC