

Innovative Systems for Improved Land Management



Mobile Applications



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- 1) What is the Land-Potential Knowledge System?
- 2) Why LandPKS?
- 3) Apps: current and future
- 4) Download the new apps
- 5) Use the apps
- 6) Data portal
- 7) Field application on the Mall (depending on weather)

What is the Land-Potential Knowledge System?

- A suite of integrated, modular apps connected to Cloud-based analytics and user-accessible Cloud storage that will allow users to ***access, share*** and ***interpret*** global knowledge and information relevant to the ***unique potential*** of each piece of land.
- A cloud-based computing platform designed to support increased productivity, sustainability and resilience → food security, watershed and biodiversity conservation.
- A global partnership that will allow each partner to quantify when and where their contributions are used.

WP43 - HARD SOIL
DARKISE

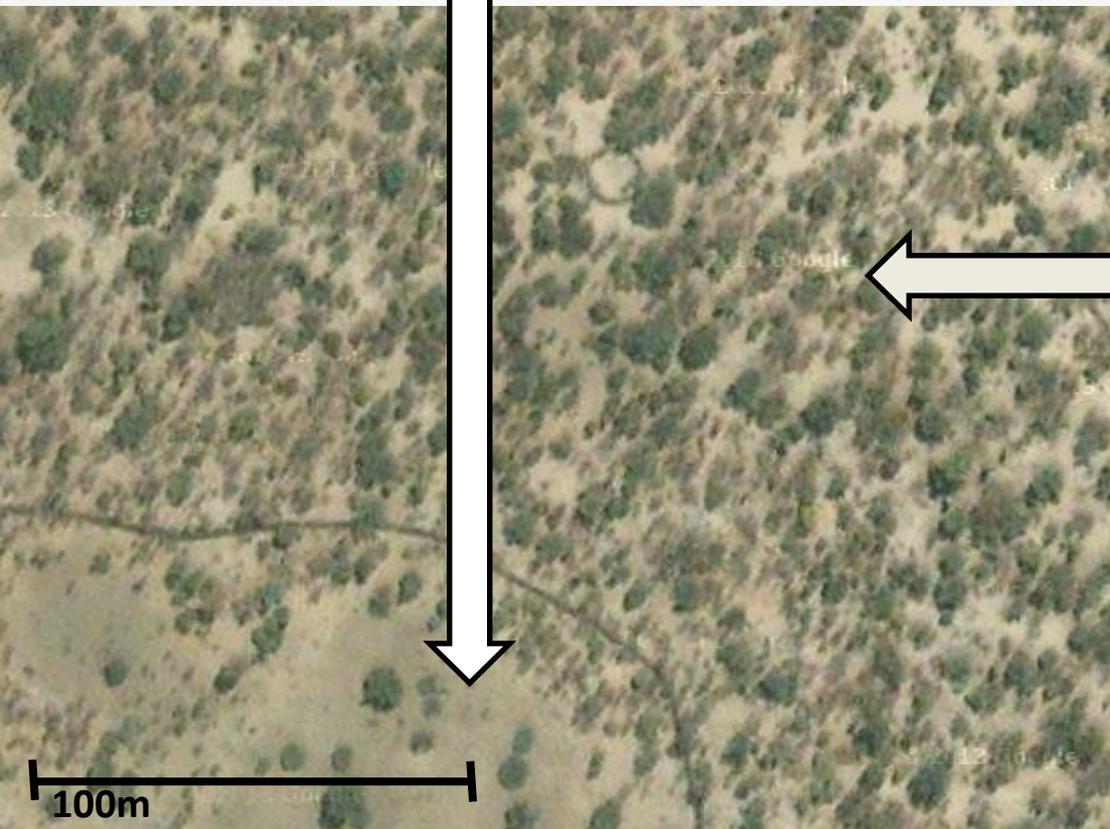
LAND THAT WILL
BE CROPPED*

1ST YEAR - NO MANURE NEEDED
EVEN DRY YEARS 'MAKES IT'
CROPPED 1999



Why LandPKS?

- Soil maps : too coarse
- Digital soil maps: never 100% perfect prediction
- Soils provide a way to store/integrate/share *relevant* knowledge + info



WP44 LIGHT SOILS -
NOT GOOD FOR CROPPING
UNLESS WET YEAR AND
APPLY MANURE



Why LandPKS?

Seamlessly share *relevant* local and scientific knowledge *globally*.



Shallow soil over calcium carbonate “pan” in the New Mexico, USA and Kunene, Namibia.

Why LandPKS: “We need to see beyond what we see, because that can help you decide what to do next.” –
Namibian workshop participant, August, 2014



*... and no, it's not just about what the
land can do*

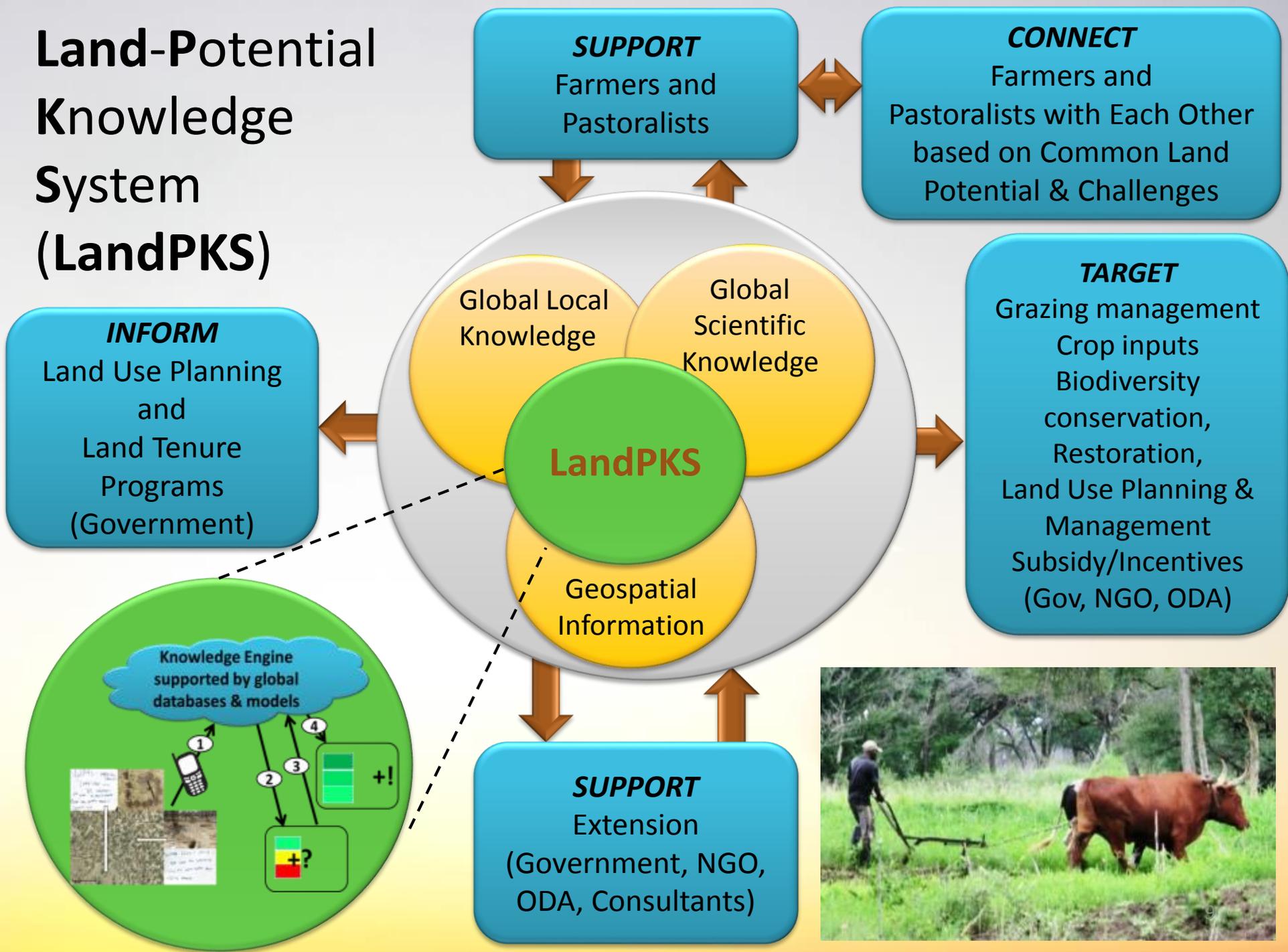
- It's about connecting people to all relevant knowledge to about their system
- And connecting them to each other
- And creating local, regional and global networks of innovators facing similar challenges.



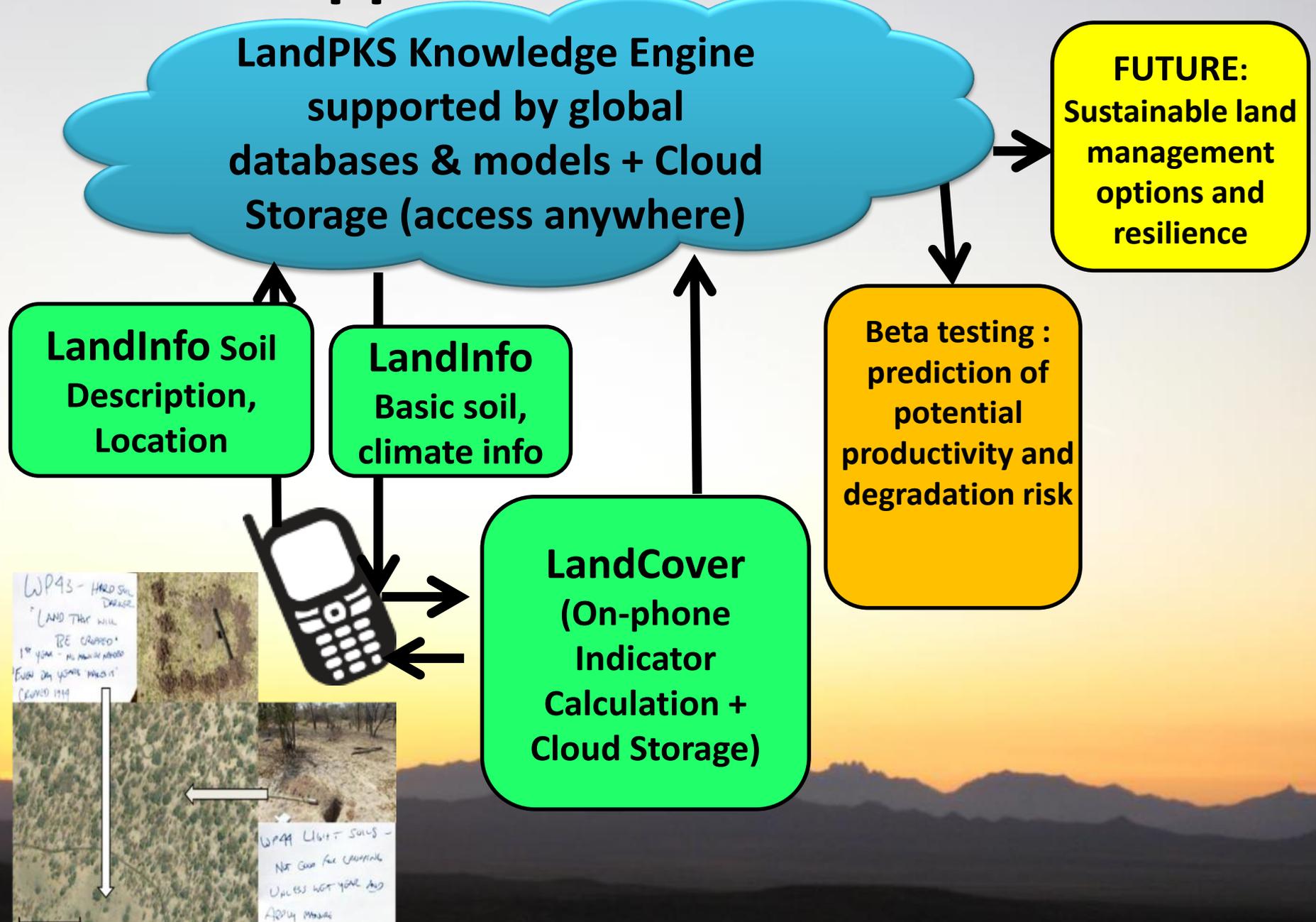
Why LandPKS? *Connect people, information and knowledge to create wisdom.*



Land-Potential Knowledge System (LandPKS)



LandPKS Apps: Current and Future



LandPKS Apps: Current and Future

April 2015
(global release)



LandInfo App.
Site and soil
characterization:
cloud data storage
& access + basic
soil/climate info

LandCover App
“Stick method” for
monitoring rangelands:
cloud data storage,
access + auto indicator
calculation

April 2015
(BETA Testing in
pilot areas only
Kenya + Namibia)



Land Potential App.
Outputs: *Relative* potential productivity and soil erosion risk for 2
general management systems (crop + forage)
Soil prediction: based on location
Productivity/erosion prediction: APEX

Future modules
(2015-2017)



Land Potential II
Outputs: Crop, management options, links
Soil predictions: real time updating of soil
property predictions
Productivity/erosion prediction: APEX,
other models, user inputs

Cropland Monitor
(in development)

Soil Erosion

Forage Production

Social Networking

Download the New Apps



Search on the names in the Google Play Store or use the links at <http://landpotential.org/landpks/app>

Use the Apps
Instructions (if required) at
<http://landpotential.org/landpks/app>





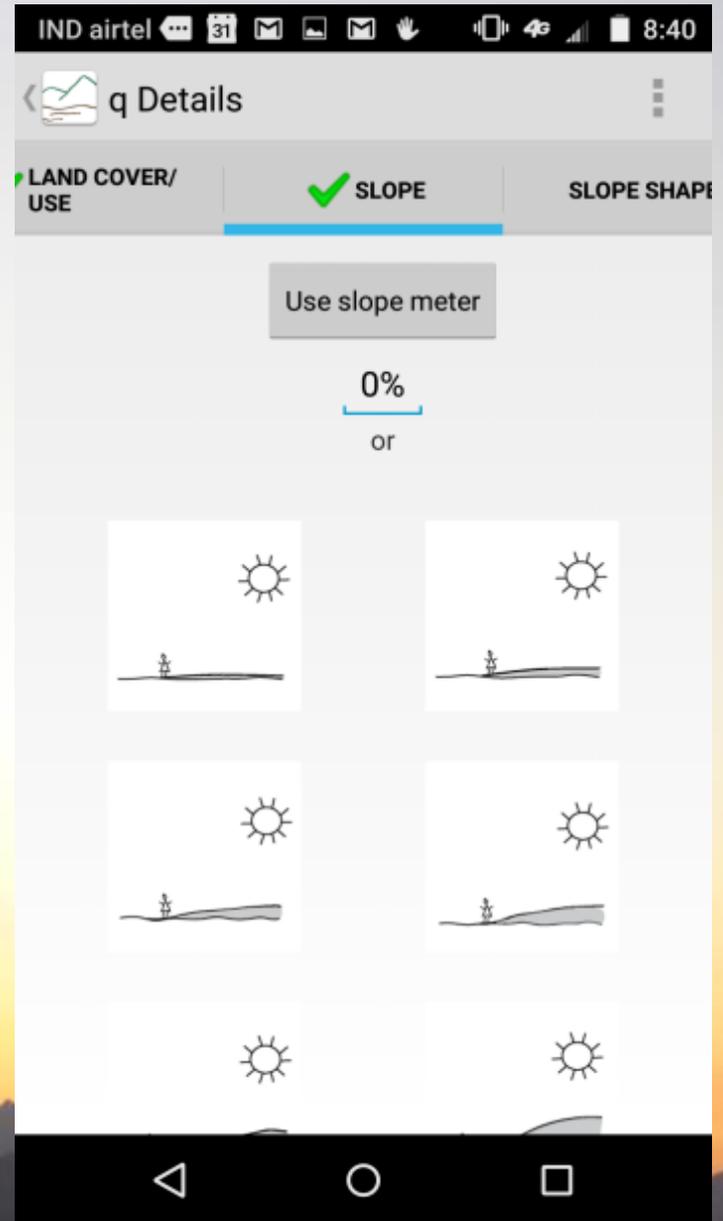
1. Opening screen

- a. Enter a **plot name**
- b. Enter **location** or tap “**Obtain GPS fix**” to use the phone’s GPS (must be turned on in Settings – Location)

A screenshot of the LandInfo app's 'q Details' screen. The screen shows a form with several fields: 'Plot Name' (q), 'Recorder Name' (jhjer250@gmail.com), 'Organization' (usda), 'Location (decimal degrees)' (0.0), 'Latitude' (0.0), and 'Longitude' (0.0). There is a 'Test plot?' section with 'Yes' selected. A button labeled 'Obtain GPS fix' is visible next to the location field. The top status bar shows 'IND airtel' and the time '8:40'. The bottom navigation bar shows the Android navigation icons.



2. Slope screen: select the slope that most closely matches the average slope in a 50 meter diameter plot, or click “Use slope meter” to measure the slope by matching the phone angle to the slope.)





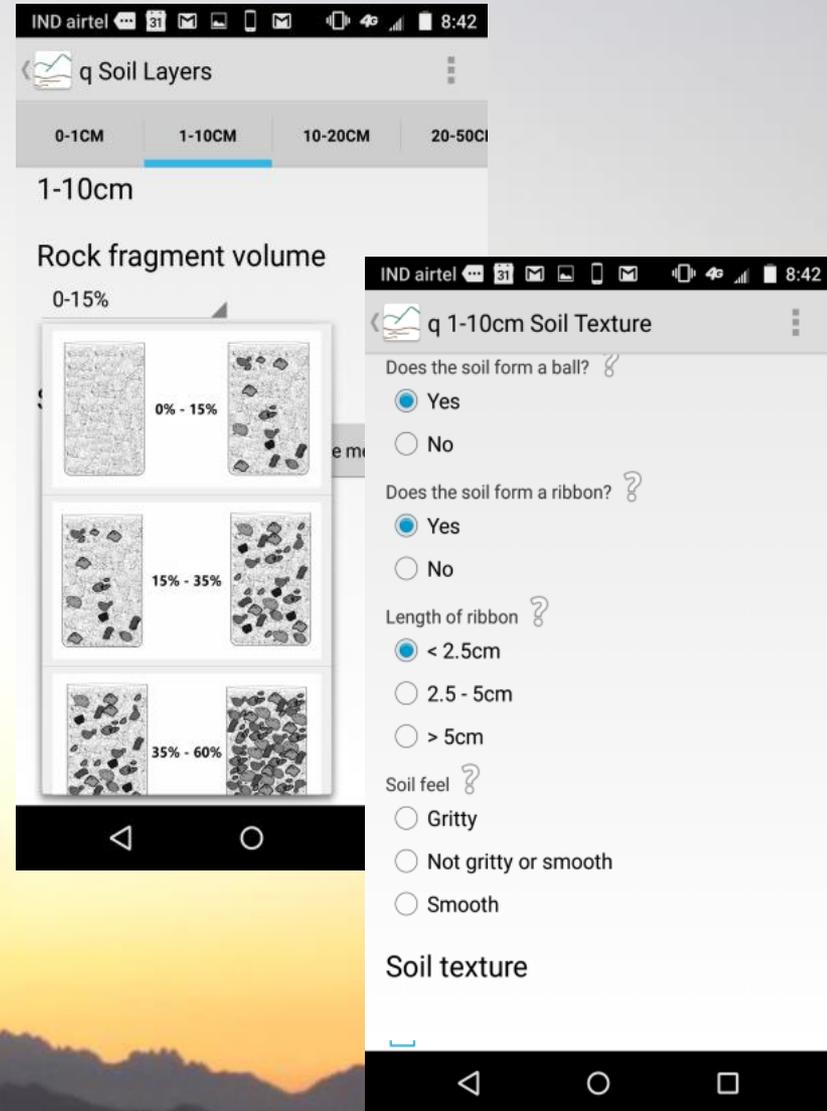
3. Soil layers screen: the soil texture of the surface (0-1cm) soil layer is required. Texture for the top 6 layers (to 70-100cm) is strongly recommended.

Rock fragment volume: select the image or % range that most closely matches the proportion of the layer that is filled with material over 2mm in diameter.

Soil texture:

Thoroughly mix a handful of soil with water until it is mud. When you are done, it should have enough moisture to make the surface shine, but not so much that water drips out of it.

Follow the key in “Guide me” using the videos linked to the “?”



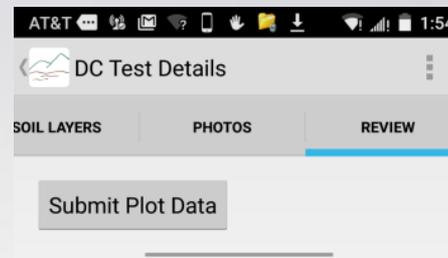


Review screen

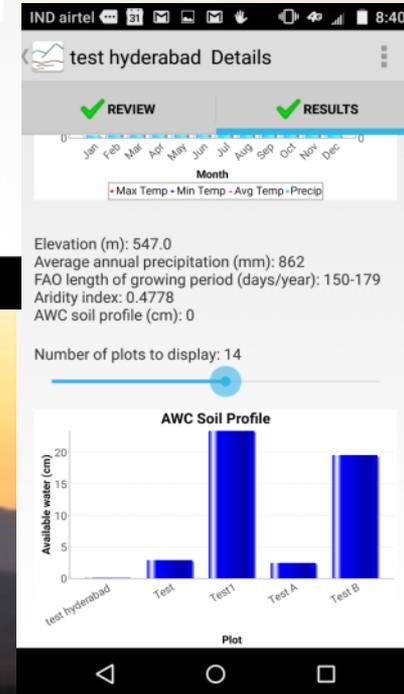
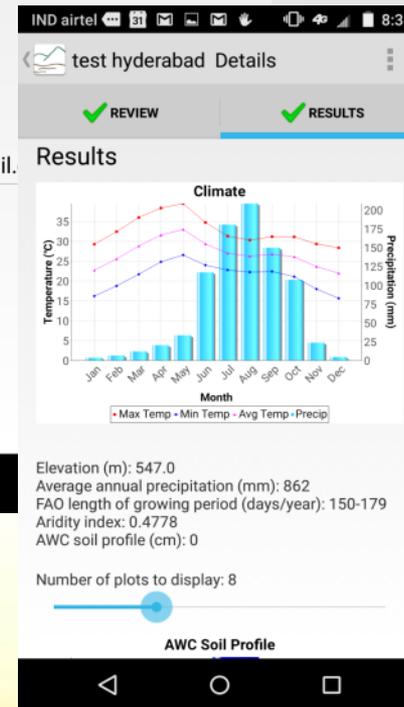
Review your entries.

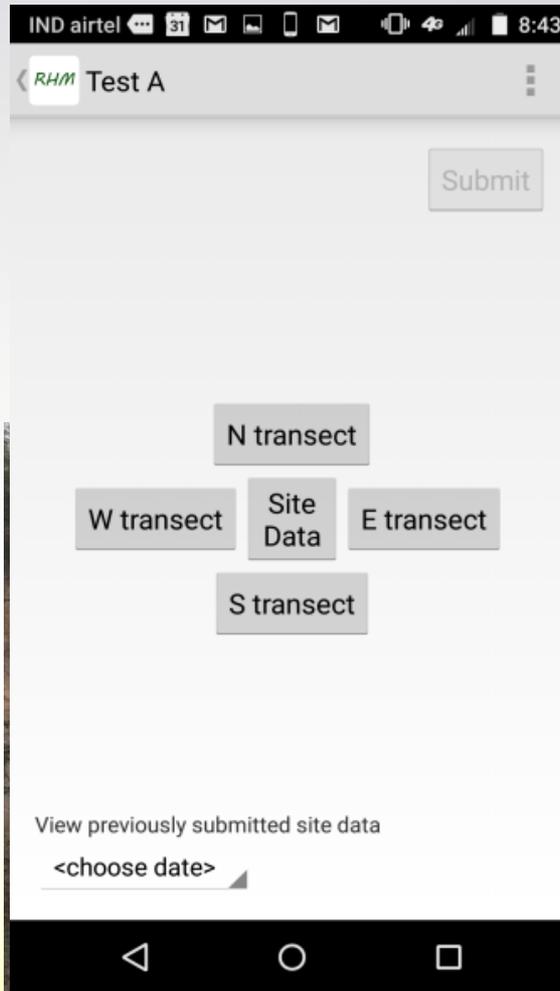
Tap “Submit Plot Data”.

Data cannot be modified after they have been submitted, though you can of course modify the data after you have downloaded them from the Data Portal (<http://landpotential.org>).



Plot ID
Plot Name
DC Test
Recorder Name
jhjer250@gmail.
Organization
Latitude
38.90164315
Longitude
-77.019997





Opening screen

Tap screen center (**LandInfo**)

Enter a **plot name**

Enter **location** or tap
“**Obtain GPS fix**” to use the
phone’s GPS (must be
turned on in Settings –
Location)

Optional: enter additional
site characterization data
using LandInfo screens.

Tap back button to return to
LandCover





Stick screens: there are 20 “stick” screens. Five sticks are placed at 5 meter (15 foot) intervals in each of 4 directions (North, East, South and West).

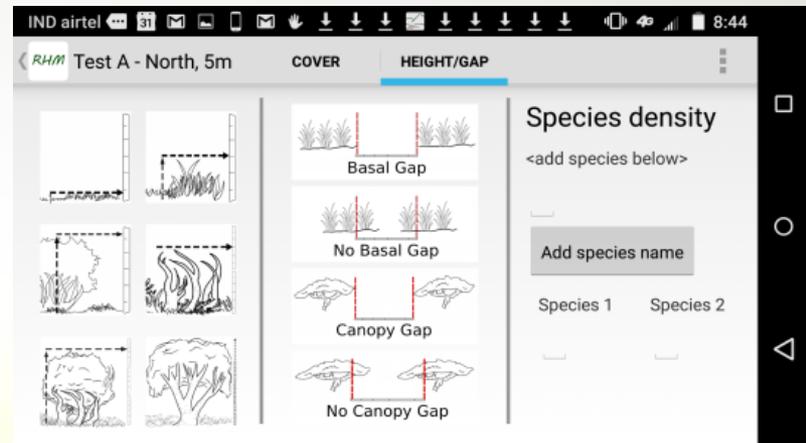
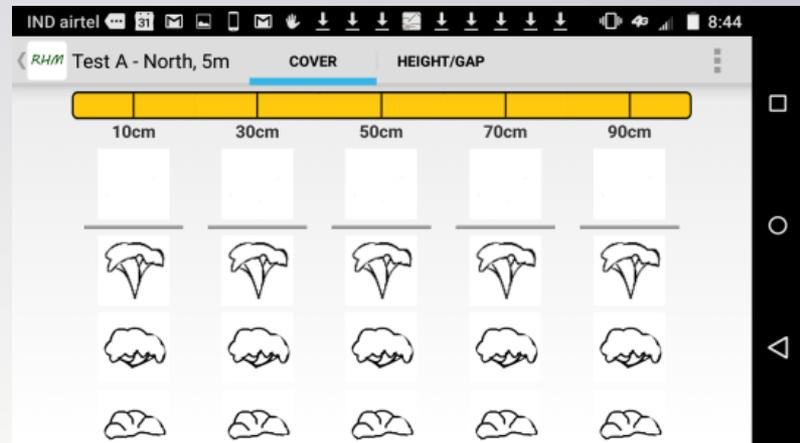
Plant cover. Record *only* if a plant leaf or stem covers the point.

Height. Record the maximum height of any plant part inside a 1 meter or 1 yard box in front of the stick. The images show height classes, using the stick as a guide.

Basal gap. Record “No Basal Gap” if the stick touches a plant base anywhere along the stick. Otherwise record “Basal Gap”.

Canopy gap. Record “No Canopy Gap” if a stem or leaf crosses the stick anywhere between 10cm (4”) and 2m (6’) above the ground.

Species density. Record the number of plants occurring within the 1 meter or 1 yard box in front of the stick.

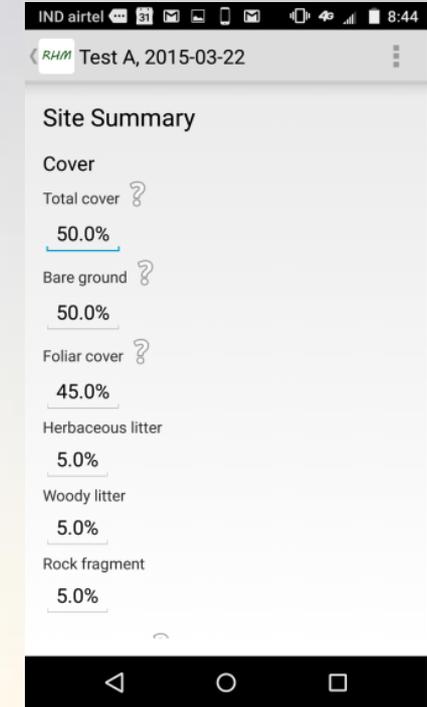
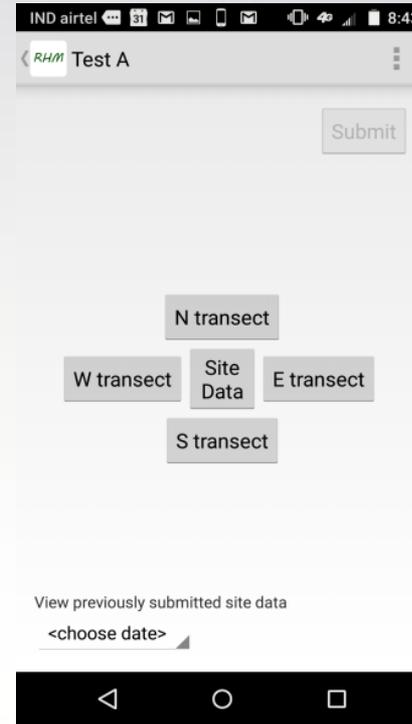




Submit

Tap “Submit Plot Data”. The “Submit” button becomes available after all data have been entered. Data cannot be modified after they have been submitted, though you can of course modify the data after you have downloaded them from the Data Portal (<http://landpotential.org>).

To see calculated indicators, choose a data collection date (lower left) and then tap “Summary” (upper left).

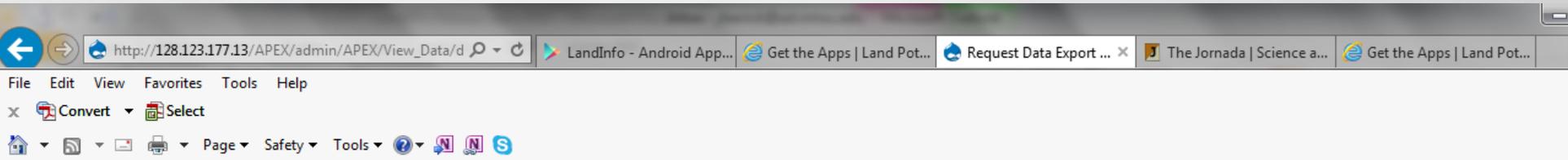


Data Portal

The screenshot shows the website's header with the logo and navigation tabs: Home, Land-Potential, **LandPKS**, and Additional Resources. A dropdown menu is open under LandPKS, listing: What is LandPKS?, Implementation, Our Partners, LandPKS Publications, LandPKS Presentations, The Mobile Applications, Data Portal, and Our Team. Below the menu is a Google Translate widget and a list of links including 'What is LandPKS?' and 'Implementation'. The browser address bar shows 'http://landpotential.org/landpks'.

The screenshot shows the 'Land-Potential Knowledge System Data Portal' interface. It features a blue header with the logo and 'My account' / 'Log out' links. Below the header are 'Home' and 'Data Policy' tabs. A 'Navigation' sidebar on the left includes a link for 'Request data export for LandInfo and LandCover'. The main content area is titled 'Map of plots using LandPKS applications' and includes a submission date: 'Submitted by admin on Fri, 04/03/2015 - 17:50'. The map displays a satellite view of Africa with several red location pins. A 'Read more' link is visible at the bottom right of the map area. The browser tabs at the top include 'LandInfo - Android App...', 'Get the Apps | Land Pot...', and 'Land-Potential Kno...'. The Windows taskbar at the bottom shows icons for Word and a yellow notification icon.

Data Portal



Home

Navigation

- [Request data export for LandInfo and LandCover](#)

Request Data Export

Enter your recorder name :

Input Recorder Name in plot you want to get

Export ALL plots in the database (download may take several minutes)

Type of Data Export

- LandInfo
- LandCover
- Metadata for LandInfo
- Metadata for LandCover



Land potential .org

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Program Materials

- LandPKS one-page summary
- Original concept paper
- Is (rangeland) science relevant?
- A strategy for rangeland management based on best available knowledge and information
- Land degradation and climate change: A sin of omission?
- Rangeland mashups and wikiology? Implementing collaborative internet technologies for rangeland management

LandPotential.org | LandPKS



What is Land Potential?

Land potential is defined as the inherent potential of the land to sustainably generate ecosystem services. Management determines whether the inherent potential is sustainably realized. Land potential includes three elements: (1) inherent potential for generation of ecosystem services, (2) potential degradation resistance, and (3) potential resilience, which is the capacity to recover following degradation.....[read more](#)

Land-Potential Knowledge System (LandPKS)

We are developing a cloud-based, land-potential knowledge system (LandPKS) that will allow the potential of land to be defined explicitly and dynamically for unique and constantly changing soil and climate conditions.....[read more](#)

Additional Resources

Check out our publication list for more information related to sustainable land management, land potential, resistance and resilience, and soil conservation.....[read more](#)

Related Projects

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Everyone deserves access to the internet, even rural Africa. Here's the tech to do it - [hivos.com/news/144-sdc...-pc-lanbarnc.com/60p6CM63yM](#) Retweeted by Land Potential



Forward

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