



# SIBWA

Seeing is Believing

Very High Resolution for Smallholders



## In Silico: Rain or Drain? That is the question!!

Bamako

May 17, 2010

And the answer is?... Hold on tight. Let us tell you a short story first.  
A story about re-Inventing the wheel... or maybe not.

Once upon a time, a massive storm came to life somewhere in South Dakota. It was not the refreshing rainstorm farmers had prayed for after several ugly drought seasons. It was dark. It was dry. It was nasty. **Malevolent.** And it was only November 11, 1933, the first of many. But not long after Black Sunday cleared, answers were sought. Solutions were found. Of course, drought was the trigger. But the cause was supernatural: It was the Dust Bowlers. It was human. And so were the solutions: Agro-forestry. Crop rotation. **Strip farming.** Terracing. **CONTOUR PLOWING.**

What? Only that? **YES, ONLY THAT. ONLY SIMPLE THINGS THAT WORK.** And 80 years later, the time is ripe for West Africa to engage its own regional Civilian Conservation Corps, and just do it. Since the 1990s, scientists at CIRAD and IER have nailed down what it takes to inject **CONTOUR RIDGE TILLAGE (CRT)** into the system, and kick off widespread improvement in smallholder livelihoods. And we, at SIBWA, are privileged to have two of these pioneers on board: **Kalifa** and **Bougouna.** Together, these guys entertain mammoth knowledge about the thing, its design, its limitations, and above all, its potential. They can tell you how it increases grain yields (biomass) by +12 to +56% (+25 to +62%) **WITHOUT OTHER INPUTS.** Talk about a smallholder-friendly technology. We're not even touching on what happens when you combine it with fertilizers. So now we see you coming with your backhanded wittiness: "so why is it that CRT is not more widespread yet?"

Uh oh. Problem. Allow us to deflect the question. Actually, to plagiate it. To ask it again. To amplify it. Rephrase it. You say: "... so why is it that CRT is not more widespread yet?" We say: "... so why is it that we under-invest in rainfed agriculture? So why is it that we only think of large-scale irrigation schemes? So why is it that we try to coax and seed the clouds, **INSTEAD OF WORKING AND SEEDING THE LAND?**" **WE ASK YOU.** You, the policy makers. The technical advisors. The financial partners. Why? Bougouna would tell you, \$20/ha is all it takes to install CRT. Make you own calculations. By the way, what was the last yield gain from cloud seeding?

Or maybe you need more proof to be convinced. You need to learn, from QuickBird, that CRT, early in the season, **accelerates crop establishment by 69% ON THE AVERAGE in 77% of surveyed cases, on-farm.** Yes. In actual, real-world, not experimental, conditions. Maybe we need to learn, from VHRI, and so far largely unbeknownst to research, that CRT **increases stand heterogeneity early in the season, WHICH IS A GOOD SIGN.** A sign that plants have more water take advantage of these residual, patchy soil fertility pockets typical of smallholder conditions. Maybe we need to realize that there was a missing link. There **WAS.** Because now we're bridging it just before your very own eyes. By using VHRI for agricultural landscape design. By providing independent confirmations. By monitoring adoption. Like this ↓ (green outlines are CRT-equipped fields in Sukumba, Mali).



VHRI may soon tell you where to best implement CRT on your farm. When DEMs become more accurate. **SO WE ASK YOU**

**AGAIN: RAIN OR DRAIN?** Harvest more rain, or drain more clouds? Harvest more rain, or drain more rivers? Harvest more rain, or drain more aquifers? By now, you should know. If you don't, come and visit us. We'll show you maps. We'll take you to the farms. **Because then you will SEE, and then you will BELIEVE.**

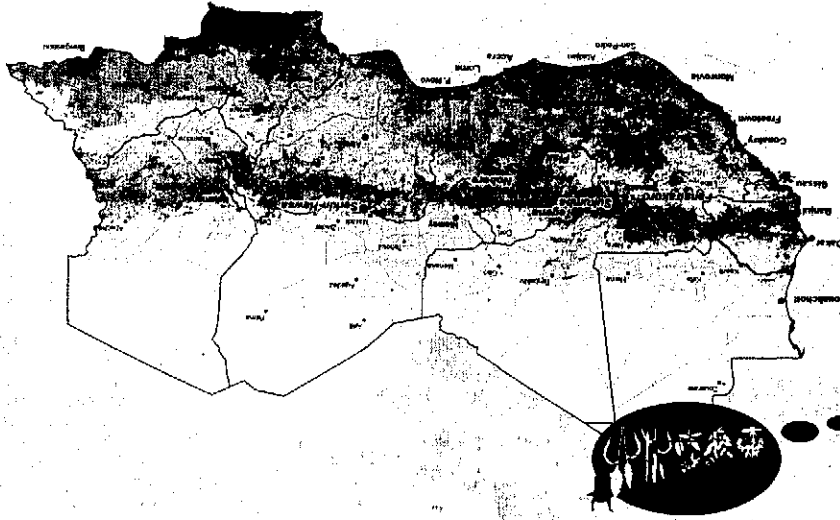
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What you see is what you believe

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About ICRISAT  
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The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 644 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Centers of the Consultative Group on International Agricultural Research (CGIAR).

**SotubaGIS**

A geospatial joint-venture initiated by ICRISAT and IER, SotubaGIS is based on *Decisive. Spatial. Analysis.* In Bamako, the fastest growing metro area of Africa. Hosted by national partner IER on the campus of the Sotuba Regional Agronomic Research Center, it flips upside down traditional partnerships to incubate collaborative modes of tomorrow: multi-stakeholder, decentralized, grass-root, trans-disciplinary and focused on regional integration.



**AGCommons**

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**Mission:** Improve the incomes and lives of small farmers in sub-Saharan Africa through location-specific information.

AGCommons (Agricultural Geospatial Commons) is an Africa-based service bureau that provides geospatial information technology services to extend the reach and impact of existing agricultural initiatives, and improve the productivity and incomes of smallholder farmers in Sub-Saharan Africa. AGCommons extends geospatial information to these smallholders, and helps them communicate their rich knowledge on various aspects of farming, along with location specific data, back to the groups and organizations working on their behalf.

The services are provided through a "commons" approach, to create the greatest possible good for the largest number of people and include data development and acquisition, visualization and cartography, and sophisticated spatial modeling specific to the agriculture development sector. AGCommons is establishing working relationships with existing service providers and work within the community to build capacities that currently are in short supply locally. AGCommons promotes the use of geospatial information technologies for agricultural development, and identifies and seeks funding for high-win initiatives.

AGCommons was launched by the Bill & Melinda Gates Foundation as part of their Geospatial Technology Program. It is led by the Consultative Group on International Agricultural Research (CGIAR) in partnership with Spatial Development International.



Seeing is Believing West Africa  
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VHRI: build site-specific VHR information containers and proto-maps. VHR: build a human interface for VHR information extraction and exchange. ROLL: roll out VHR to farmer fields. FARM: populate VHR through in-situ interactions (incubate on-farm). SILCO: explore VHR support functions (incubate in-silico). FEED: Collate information from incubators, forward updated maps to sites and collect feedback.

