Agricultural Knowledge Management Tools and Processes: A Case of Rice Knowledge Management Portal

www.rkmp.co.in Dr. S. Arun Kumar Scientist (Agril. Extension) and Co-PI **Rice Knowledge Management Portal Directorate of Rice Research Hyderabad** 

### **Knowledge Management**

- A range of practices used in an organization to identify, create, represent, distribute and enable adoption of insights and experiences.
- Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice
- An established discipline since 1991



# **Knowledge Management**

- Create, capture, analyse, apply, and reuse knowledge
- The process responsible for gathering, analysing, storing and sharing knowledge and information
- It involves the design, review and implementation of both social and technological processes
- Making it available to others



### Two tracks of KM

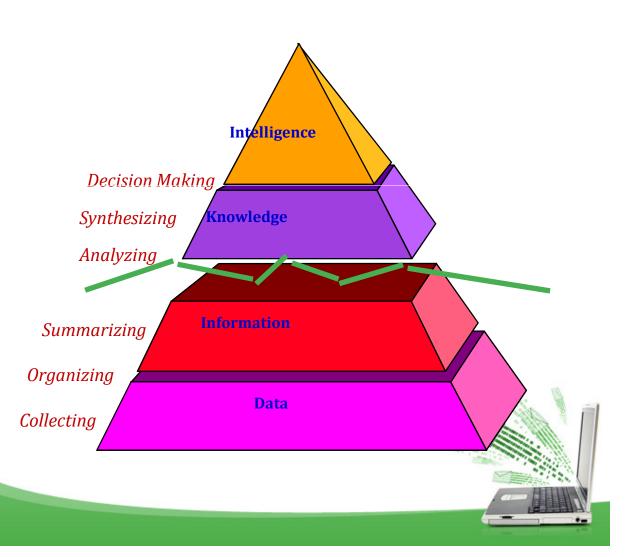
#### Adapted from Sveiby

One: Management of People

Human Judgmental Contextual Tacit

The transfer requires learning

Two: Management of Information Codifiable Explicit Easily transferable

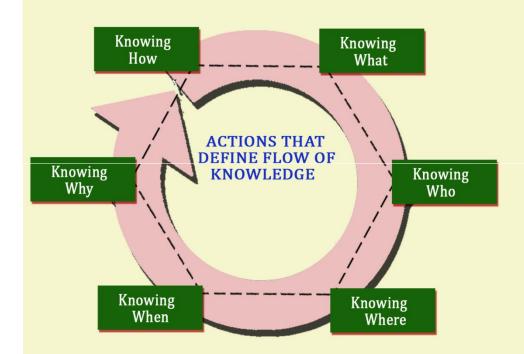


### Knowledge conversion: tacit & explicitdrr example

_	tacit	tacit	_
tacit	individual +individual  Interaction with  Hybrid rice scientist	Individual + group sharing the Hybrid seed production details with trainees	explicit
tacit	individual +group + org  creation of the new  methods enriched  advanced techniques  and the team's K base	group + organization  standardization of this  K into a manual and  embodying it in the  product	explicit
	explicit	explicit	

### **KM-Technologies**

### Fifteen knowledge management technologies for global organizations



Flow of explicit knowledge happens through different formats (documents, charts, pictures, audio, video etc)

Explicit knowledge is retrieved and shared if it is believable or supported by an expert or practitioner

- Portals
- Business intelligence / data warehousing
- Document management
- Intelligent agents
- Search engines
- Knowledge resource directories / Corporate Yellow Page 1
- Customer Relationship Management CRM / Contact Management
- Messaging / Email
- Groupware or collaboration technologies
- Reminders / Web Calendars
- Decision Support Systems
- Workflow and tracking
- Web Casting
- e-learning / Web based training / multimedia based training / CBT
- Content Management

# KM- the Challenges



Lack of understanding of KM

Employees lack time for KM Culture

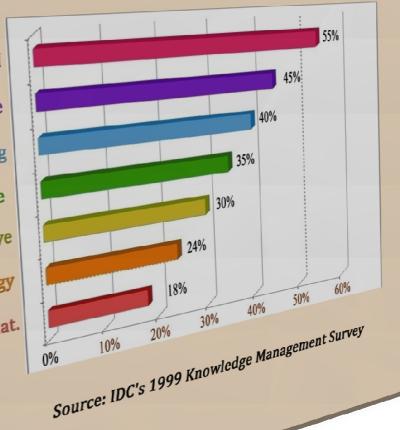
Does not encourage sharing

Lack of incentives to share

Lack of funding for KM initiative

Lack of Appropriate technology

Lack of commitment from senior mat.



### Rice Knowledge Management Portal **Objectives**

strengthen better I flow of rice knowledge in rice sector



build the capacity of the stakeholders



uploading, sharing and harnessing rice knowledge amongst rice stakeholders



develop structure and onter Content Strategy content of RKMP



# Knowledge Management Portal –Processes defined

- Knowledge flows and Information needs
- ➤ Identify workflows and functional requirements
- ➤ Benchmarking
- ► Involvement of Organizations / stakeholders
- ➤ Design features
- **►** Information Architecture
- **➤** Content Development strategies
- ➤ Offshoot applications / Platforms
- ➤ Main Portal Development
- **≻**Capacity building
- ➤ Pilot and refine
- **►** Institutionalize



# Significant Achievements

- First national level one stop shop for agricultural knowledge in India
- Synergy of semantic web technologies and rice knowledge
- Harnessing existing AICRIP set up through Knowledge Management Tools
- In built sustainability
- Largest database of location specific content in usable format
- 24x7 learning opportunities in local languages in modular format.
- Transmitting online content through offline delivery mechanism
- Transmitting offline content through digital means





Home Research Domain Extension Domain Farmers Domain Service Domain General Domain Rice Stats E-Learning

Rice researchers across the world can access, share, discuss research data, themes, tools & knowledge for better rice science!

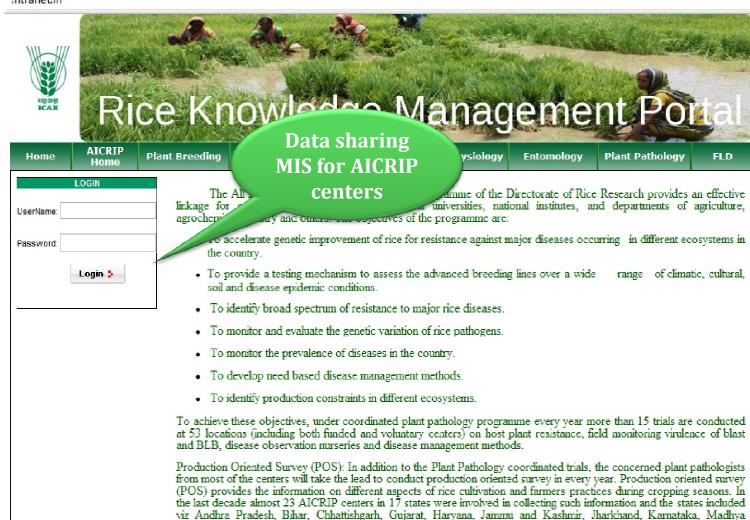
- Data repository of 27000 Datasets & AICRIP Intranet
- Rice Vocs 2773
- Research Fora To capture implicit knowledge from individual experts in rice research and development institutes
- · Bio-informatics tool
- Guidelines

- · Directory of Rice Researchers
- Tools and techniques
- E- Books/ E- Manuals -28
- Rice State wise -17
- Research Themes -21
- India Rice Research Repository
- · History of Rice Breeding
- · Rice Research in India



### AICRIP Intranet (www.aicrip-intranet.in)

intranet.in



Pradesh, Maharashtra, Orissa, Puducherry, Punjab, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. The survey team also included the scientists of Directorate of Rice Research and its cooperating centers located in different states

### **Data Repository**

TEAT BIO	k mowle	dae Manao	ement Portal	
Search 27000 AICRIP Datasets	Search for			
<b>Year</b> Any year ▼	Volume Any volume	Season Any season	Discipline Any discipline	•

#### Welcome to the Data Repository of RKMP!

RKMP believes in the data-information and knowledge transformation continuum. We bring to you a huge database of about 27000 datasets related to AICRIP multi-location trials conducted for last 45 years across the country.

With effective tagging based on disciplines, year, season in searchable pdf format, the RKMP is catering to data requirements of rice researchers of the country.

The Directorate of Rice Research continues its multi-location All India Coordinated Rice Improvement Programmme (AICRIP) with active partnership of 47 funded cooperating centers affiliated to State Agricultural Universities (SAUs), State Department of Agriculture and other Research Institutes of ICAR. Besides, over 50 voluntary centers participate in this multi-location testing program. AICRIP with its 45 years of useful existence has contributed significantly in overall rice production front which has ensured food security for the country.

It is the data about these lines and their performance that can make a difference, if used and reused effectively.

Username				
Password				
	Login			
Register   Forgot Password ?				

Happy browsing!



Extension Domain caters to the rice extension professionals: to access, share, discuss, update the location specific rice knowledge towards excellence in extension services!

- Production know How -1186 topics
- Package of Practices -1849 topics
- · Recap sheets
- Weed Management and Weed Information System
- Indigenous Technical Knowledge
- Frontline Demonstrations
- Farmers Innovations
- Fertimeter

- Diagnostic tools
- Digital Photo Library 522
- Spot Nearest Research/ Extension office
- Concept Maps
- Government Schemes -75
- Extension Methods -68
- FAQS -459
- Protection Concerns of the month

### Diagnostic Tool



# Diagnostic Tool

Home

Diagnostic Home

Find

#### Welcome to Image driven Rice pest and disease diagnostics







Welcome to the exciting completely image driven rice pest and disease diagnostic tool. This has been designed to help extension workers, farmers and other stakeholders in identifying the field problems they face in Indian rice fields. The diagnostics is basically



Maximum Tillering

Select Stage of the Crop



Healthy Unhealthy



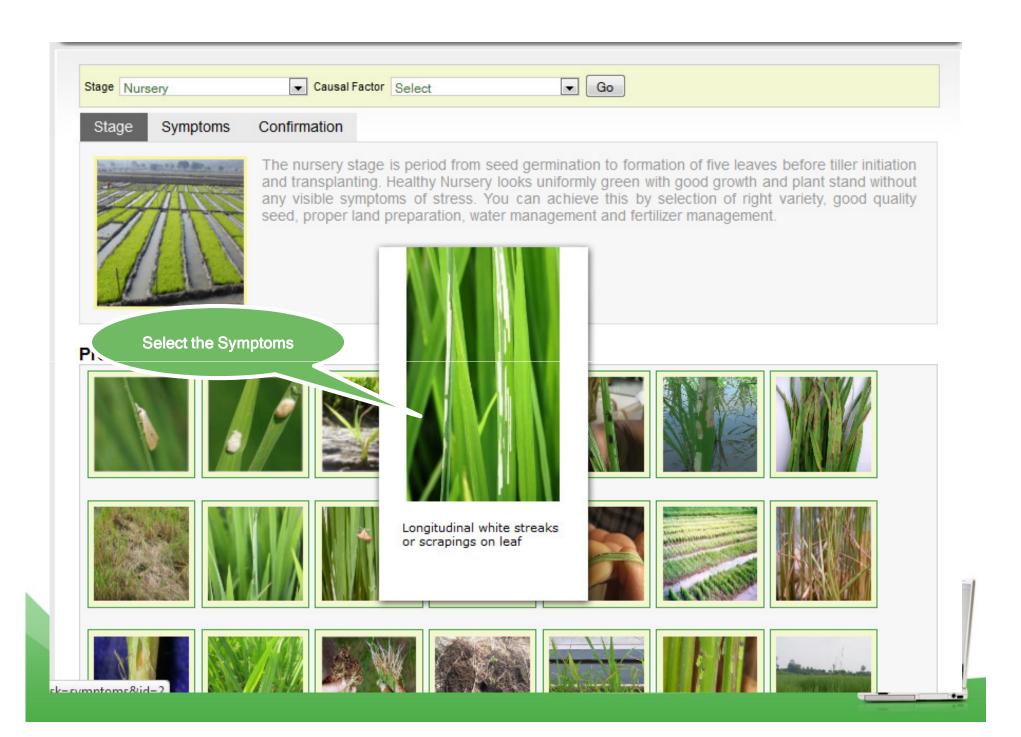
From sowing to transplanting -duration approximately one month

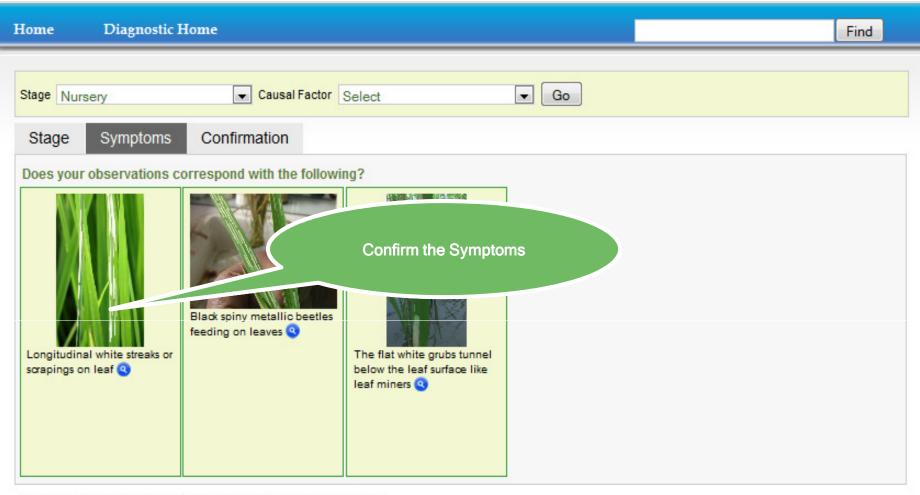




Ripenin9







If yes click here. If not see below and click on relevant image

The symptoms may be confused with the following



Hispa (Know more about this pest)

Scientific Name: (Dicladispa armigera (Olivier))



Longitudinal white streaks or

scrapings on leaf Q



Black spiny metallic beetles feeding on leaves Q

Get the Pest Management Information



The flat white grubs tunnel below the leaf surface like leaf miners



#### Diagnosis

- 1. Translucent white patches that are parallel to the leaf veins similar to that of leafolder blue beetle and case worm damage
- 2. Can be differentiated by absence of leaf folds and presence of spiny black metallic beetles feeding on the upper surface of leaves
- 3. White, grub like larvae are seen mining through leaf tissues

#### Manage the Pest

What to do?

Spray quinalphos 25EC @ 2000 ml/ ha or monocrotophos 38 WSC @ 850 ml / ha or chlorpyriphos 20 EC @ 1500 ml/ ha

When to do?

Insecticide interventions are required only when hispa population exceeds 2 adults or larvae per seed bed.

Why to do?





Home Research Domain Extension Domai Farmers Domain Service Domain General Domain Rice Stats E-Learning

Farmers domain is a platform for the rice farming community to access, share, discuss, update the location specific rice knowledge in local languages!

- Production know How -1362 topics
- Package of Practices -1795 topics
- Weed Management -254 topics
- Farmers Innovations

- Audio-Video Gallery -1558 & 29
- Digital Photo Library -522
- Experts Answers on Rice
- Government Schemes -91



#### Welcomes you to Uttar Pradesh





#### NARENDRA DEVA UNIVERSITY OF AGRICULTURE &TECHNOLOGY



Home Research Domain Extension Domain Farmers Domain Service Domain General Domain Rice Stats E-Learning About RKMP Contact Us

Best Vie

Home >>Farmers Domain >>Uttar Pradesh >> Package Of Practices







Annou

Content in Hindi Uttar Pradesh as default

ోందు ఆసక్తి వ్యక్తికరణ (EXPRESSION OF INTEREST)

 Listen to Dr. Shaik N. Meera about RKMP (in Telugu) Radio

#### FIS Packages of Practices

- · Agro Climatic Zones
- · Farming Systems
- · Hybrid Rice Cultivation
- Bio fertilizers
- · Cropping Systems
- ITKs
- · SRI Cultivation
- Storage
- · Popular Varieties
- Weeds

Upload new Content

Search Farmers Domain:

Search

करायनिक समूह के आधार पर

Contributed by rkmp.drr on 24 Aug, 2011

रासायनिक समृह के आधार पर

- एलिफैटिक्स
- एमिडस और एसिटामिडस: जैसे ऐलेक्लोर और बचैलर
- आर्सेनिकल्स
- बेंजोड़क्स और फ़िनाइल एसिटेटस
- बाडपिरिडिलिमस
- कार्बामेटस और कार्बानिलेटस
- डाइनाइट्रोएनिलाइन्सः जैसे ओर्जेलिन, पेन्डिमिथेलिन, ट्रिफ्लुएरिन
- डाइफिनाइल ईथर: जैसे नाइटोफ़ेन, ऑक्सीफ्लोरफ़ेन
- नाइट्राइल्स
- फ़ीनोल्स
- फ़ीनोक्सीएसिड्स: जैसे 2,4-डी
- पिरिडैजिनोम्स
- थायोकार्बेमेट: जैसे बेंथियोकार्ब

Uttar Pradesh

**Cloud Tag** 

rojection with vernacular Na work December of Polymore (HRSP ecommended POP Popular Varieties

Delary of sites

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when Management

Protection with very acutar Names

more tags

**Upload Opportunity** 

Upload content with single click



#### Welcomes you to Uttar Pradesh





#### NARENDRA DEVA UNIVERSITY OF AGRICULTURE &TECHNOLOGY



Home Research Domain Extension Domain Farmers Domain Service Domain General Domain Rice Stats E-Learning About RKMP Contact Us

Search Farm

Best Viewed in Mozilla Firefox, (

Home >>Farmers Domain >>Uttar Pradesh >> Package

#### Select the State

#### Announcements

- · 4th International Rice Congress in Bangkok, 27-31 October 2014
- · Watch RKMP Live Programme broadcasted in Gemini News

#### FIS Packages of Practices

- Agro Climatic Zones
- · Farming Systems
- · Hybrid Rice Cultivation
- Bio fertilizers
- · Cropping Systems
- ITKs
- · SRI Cultivation
- Storage
- Popular Varieties
- Weeds

Upload new Content

Search

#### रासायनिक समूह के आधार पर

Contributed by rkmp.drr on 24 Aug, 2011

#### रासायनिक समृह के आधार पर

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- डाइफिनाइल ईथर: जैसे नाइट्रोफ़ेन, ऑक्सीफ्लोरफ़ेन
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- पिरिडैजिनोम्स
- थायोकार्बेमेट: जैसे बेंथियोकार्ब





Assam

Bihar

DRR

Chhattisgarh

Haryana

Karnataka

Maharashtra

Manipur

National Orissa

Punjab

Tamilnadu

Uttar Pradesh

West Bengal

Meghalaya

Uttarakhand

Tripura

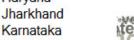
Kerala

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cutar Names















#### Welcomes you to Andhra Pradesh



### Acharya N G Ranga Agricultural University

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Search Farmer

#### ed in Mozilla Firefox, Google Chrom

Home >>Farmers Domain >>Andhra Pradesh >> Pag

Andhra Pradesh is selected
Telugu content is seen





Andhra Pradesh ▼



#### Announcements

- 4th International Rice
   Congress in Bangkok, 27-31
   October 2014
- Watch RKMP Live Programme broadcasted in Gemini News channel on 25 Aug 2013 -Telugu

#### Upload new Content



#### Cloud Tag

Rice Wood Management roduction Knows when Pop

EIS

Rice Soils
Crop Protection with Vernacular

Previou Articles pop rowth Display Indiana Presidents produce Section Dec. and Decides Primes

more tags

### FIS Packages of Practices

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- Farming Systems
- · Hybrid Rice Cultivation
- · Bio fertilizers
- · Cropping Systems
- ITKs
- · SRI Cultivation
- Storage
- Popular Varieties
- Weeds

### <sub>13</sub> నాట్లు పేయటం

Contributed by issacfinny2000 on 13 Sep, 2013

Terms: FIS ,Package of Practices ,Recommended POP

Read more

13 Sep |వరి విత్తనాల్లో నిద్రావస్తను తొలగించుట

Contributed by issacfinny2000 on 13 Sep. 2013

కోత కోసిన పెంటనే విత్తనాలను వాడుకోవాలంటే వరి గింజల్లోని నిద్రావస్తను తొలగించి అధిక మొలకళాతం రాబట్టటానికి , లీటరు నీటికి తక్కువ నిద్రావస్థ ఉన్న విత్తనాలకైతే 6.3 మి.లీ లేదా విజేత లాంటి ఎక్కువ నిద్రావస్థ ఉన్న విత్తనాలకైతే 10 మి.లీ గాఢ నత్రికామ్లం కలిపి ఆ ద్రావణంలో 24 గంటలు నానబెట్టి మరో 24 గంటల పాటు మండేకట్టాలి

Terms : FIS , Package of Practices , Recommended POP

Read more

#### **Upload Opportunity**

Upload content with single click





Service domain is a platform to keep the rice stakeholders informed of trade and weather for hetter

Service domain is a platform to keep the rice stakeholders informed of trade and weather for better decisions in rice enterprises

- · Trade Know How
- Weather information

- Spot Nearest Research/ Extension office
- · Mandi prices

#### **Rice Stats**

to provide the timely and accurate rice statistics for the rice policymakers!

- Rice Almanac
  - GIS Maps



### Trade Information System (www.tis.rkmp.co.in)



Home | Trade Home | Contact Us | Feedback | Registration



#### Why Trade Information System?

Rice is one of the largest agriculture export items from India. A decade ago, India used to export only Basmati rice. Non-Basmati rice has also become a major item for export, registering a steady upwards trend in recent years, but, in monetary terms, the basmati varieties bring in more foreign exchange than non-basmati varieties of rice. A tremendous demand for basmati rice in the international markets has seen the country's basmati rice exports increased from about USD 470 million in 2000-2001 to about USD 1900 million during 2008-09.





#### About Rice Knowledge Management Portal

In the changing scenarios and shifting paradigms, Indian Council of Agricultural Research (ICAR) wishes to be the global leader in promoting the use of Information and Communication Technologies (ICTs) in agriculture by developing national level knowledge management portal. As a first step towards achieving this objective, an exclusive portal on rice viz., Rice Knowledge Management Portal (RKMP) is being developed by ICAR under the prestigious NAIP project. The portal is being built by the Directorate of Rice Research in association with 8 consortia, two convergent and 20 AICRIP partners. This will serve as a backbone for rice sector in sharing rice knowledge through latest ICT tools including mobile telephony. It will also help Ministry's ongoing activities in reaching out to the farmers with most effective extension advisory services.









**Major Exporters** 



**Major Importers** 



Market Diversification



Links on Rice

Related Links

CAR E-learning in Ja-AIP E-learning in Mo

Expert Answers on Rice
India Rice Research Repository

Rikipedia

Food Safety Regulation

22

Client Login

Farmer's Dilemma & Exporter's Dilemma

New User Register Here

### **Food Safety Regulation**





Home | Trade Home | Contact Us | Feedback | Registration



Food Safety Regulation

Country	Food Laws	Labeling Requirements	Packaging and Container Regulations	Food additive Regulations	Pesticides and other Contaminants	Other Regulations and Requirements	Other Specific Standards	Copyright and/or Trademark Laws	Import Procedures	Government Regulatory Agency Contacts	Other Import Specialist Contacts
Argentina	<b>7</b>	<b>1</b>	<u> </u>		<u> </u>	<u>12</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<b></b>
Brazil	<b>1</b>	<u> </u>	<u> </u>	<u> </u>	75	<u>T</u>	<u></u>	<u> </u>	<u> </u>	<u>7</u> .	<b></b>
CostaRica	<b>1</b>	<u> </u>	<u> </u>	<u> </u>	75	<u>T</u>	<u></u>	<u> </u>	<u> </u>	<u>7</u> .	<b></b>
Ecuador	<b></b>	<u>1</u>	<u> </u>	<u> </u>	<u>**</u>	<u>T</u>	<u> </u>	<u> </u>	<u> </u>	<u>**</u>	<b></b>
Finland	<b></b>	<u> </u>	<u> </u>	<u> </u>	<u>**</u>	匹	<b>7</b>	<b></b>	<b>1</b>		<b></b>
France	<b></b>	<u>1</u>	<u> </u>	<u> </u>	<u>**</u>	<u>T</u>	<u> </u>	<u> </u>	<u> </u>	<u>**</u>	<b></b>
Germany	<b></b>	<u> </u>	<u> </u>	<u> </u>	<u>**</u>	匹	<b>7</b>			<u>**</u>	<b></b>
Ghana	7	<u></u>	<u> </u>	<u> </u>	<u>~</u>	<u>1</u> 2	<u> </u>	<b>1</b> 23	<b></b>	<u>**</u>	<b></b>
Hong Kong	<b></b>	<u> </u>	<u> </u>	<u> </u>		<u>1</u> 2	<b>1</b>	<b>1</b> 23	<b>1</b>	<u> </u>	<b></b>
Hungary	<b></b>	<u> </u>	<u> </u>	<u> </u>	<u>**</u>	<u>1</u> 2	<b>1</b>	<b>1</b> 23	<b>1</b>	<u> </u>	<b></b>
Japan	7	<u></u>	<u> </u>	<u> </u>	<u>~</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>~</u>	<u> </u>
Kenya	<b>7</b>	<u> </u>	<u> </u>	<u> </u>	<u>~</u>	<u> </u>	<u> </u>	<b></b>	<b></b>	<u>~</u>	
Kuwait	<b></b>	<u> </u>		<b>7</b> 5	<u> </u>	<u> </u>	<u></u>	<u></u>	<u></u>	<u> </u>	<b>1</b>



### Mandi (Market) Prices

#### Announcements

- 4th International Rice Congress in Bangkok, 27-31 October 2014
- Watch RKMP Live Programme

#### User login

Username: \*

Password: \*

Log in

- · Create new account
- Request new password

#### **Visitors Profile**

- Registered Users: 2411
- · Last Registered User: sherjungvirk
- Your IP: 66.249.74.194

#### Mandi (Market) Prices

NR: Not Reported



Print Send to friend



Here you will find Market prices of Rice that are prevailing in the regulated market yards across the country. We hope that this information will be useful for better decision making.

This is only indexing service from Agmarknet.nic.in . We gratefully acknowledge the original source.

"The arrival and prices of different agricultural commodities as received from the Agricultural Produce Market Committee (APMCs) of different States are uploaded at AGMARKNET portal for information only and shall not be considered as guidance, invitation or persuasion. Users/visitors have to make their own decisions based on their own independent enquiries, appraisals, judgments, wisdom and risks. The Govt. of India shall not be liable or responsible for any loss or cost or any action whatsoever arising out of use or relying on the arrivals and prices and other related information disseminated at the portal."



#### Close

#### Market-wise Daily Report On 05/12/2013

Com	modity: Rice	'	Variety wise

Market	Arrivals (Tonnes)	Origin	Variety Minimum Price (Rs./Quintal)		Maximum Price (Rs./Quintal)	Modal Price (Rs./Quintal)			
Gujarat									
Jhagadiya	1		Other	1640	2856	2370			
Jharkhand									
Godda	NR		Medium	3000	3200	3100			



General domain for the house-makers, children, students & the general public to know about rich history, culture, facts , recipes, value

- · History and Evolution of Rice
- Rice in Human Nutrition -61 recipes
- Virtual Rice Resources
- · Rice in Indian Culture
- Rice End Products -12
- Seed Availability

products, news & events of rice!

- Rice Facts
- News and Events
- Virtual Tours -20
- User Surveys
- Feed Aggregator





Multi-dimensional e-learning platforms for providing online learning opportunities!

- Learn Rice and Learn Rice -Moodle
- A total of 18 e- courses are available

**Some E-Learning courses..** 

- SRI
- Hybrid Rice Production



# Innovations in technologies and processes

- Semantic portal with 2500 terms tagged
- Harnessing existing AICRIP set up with ICTs
- Multiple delivery mechanisms
- Rice check program: Vast knowledge available in the portal is brought under 9 specific checks
- Offline CDs / Mobile apps for real-time tools like Diagnostic tool & Fertimeter



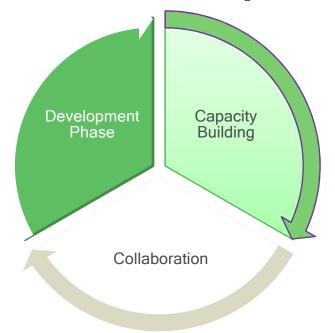


# **Partnerships**





The views of the rice stakeholders in the private sector were taken into account for developing the portal and serving them better



**Capacity Building:** The major issues identified for integrating the Private/NGO- Public sector with RKMP are as follows

- 1. Private Sector information on public portal : Challenges
- 2. Incorporating service component into RKMP
- 3. Platforms/Interface development for Private sector
- 4. Advertisements: prospects and issues
- 5. Mobile Applications of RKMP Perspectives of Private sector.



Collaboration: Companies like Mahindra
Samriddi and Savannah seeds have
shown interest in collaborating with
RKMP, companies have come forward
to showcase their products on the
portal



### Opinion of client about intervention

"When the Principal Investigator has this kind of clarity, the projects ought to be successful. Congratulations" – **Prof. SL Mehta, Chairman, RPC NAIP** 



**Director General (IRRI)** visited RKMP at DRR and appreciated the efforts







"I visited your RKMP and it is
definitely a good resource of
information on rice. Congrats for the
exhaustive work your team has done"
- Sarah M. Fernandes, Information
and Knowledge Management,
Africa Rice Center (AfricaRice),

RENIN



"Amazing work" – **Martin Parr, KM Programme Manager, CABI, UK** 

RKMP is for me not only a product, but a model, a framework too. You can discontinue developing the product but you can continue to refine the framework - that is how your leadership will come to be recognized"

- Dr. Venkataraman Balaji Director, Technology & Knowledge Management Commonwealth of Learning, Vancouver, BC, CANADA

# Facts about RKMP

Number of Visitors

737.460

Unique Visitors

64,418

No. of hits on the sub-

project: 737,460

Digitization of

Datasets: 27000

Training of critical mass (no. of experts trained) - 2675



Number of novel methodologies developed for research - 15

No. of e-courses developed: 19



Development of linkages

International – 3

National - 5







Enhanced Knowledge Sharing and public Awareness activities carried out - 56



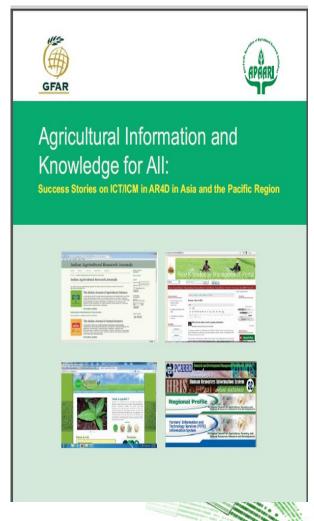
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### Success stories

#### **FAO -APAARI Success Story**

The success story has highlighted about the

- ➤ How can users contribute to RKMP?
- Interactivity and ease of users
- Best usage scenarios
- ➤ User experience and how RKMP has influenced their life



# Thank you





























