agMOOCs
Drought Monitoring: a global perspective
Balaji Vankataraman

Welcome to this talk on drought monitoring global perspective. This talk is part of the GIS in Agriculture MOOC. My name is Balaji. I work for the Commonwealth of Learning. My co-author in this talk is Dr. Shridhar who's based in India.

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At the end of this talk you'll be able to say our state a few new things. You'll be able to say why information is important in drought preparedness. You will be able to state the names of a few agencies or organizations that are involved in crop monitoring at the global level or at national level in some countries. You will also be able to state that micro level monitoring of drought it’s not as mainstream as it should be.

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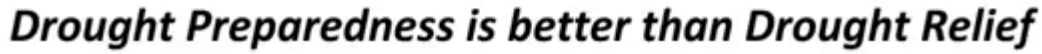

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Two foundational statements; first, drought preparedness is better than relief, preparedness is better than relief in many disaster management situations, it is particularly so in drought.
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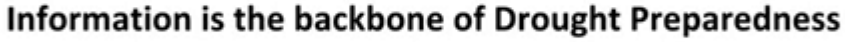

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Information is the backbone of drought preparedness. Information is the backbone of drought preparedness. These two statements summarize vast amount of international experience and insights they are attributed to Professor Donald Wilhite whose work had led to drought monitoring systems in United States as well as in Sub-Saharan Africa.
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Preparedness is founded on

Drought Monitoring

Vulnerability and Risk Assessment

Preparedness is founded on two activities. One is monitoring the other is vulnerability and risk assessment. Both these activities that is monitoring and vulnerability and risk assessment or information intensive, and GIS is a powerful way to organize present and analyze information. This is what you understood in this course so far.
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GIS is a highly valuable tool

For

Drought Monitoring and

Vulnerability and Risk Assessment

On

Any scale, global to micro

GIS therefore provides an excellent set of tools for drought monitoring and vulnerability and risk assessment as well. Most important these tools can operate on any scale from global to micro, from global to village levels.
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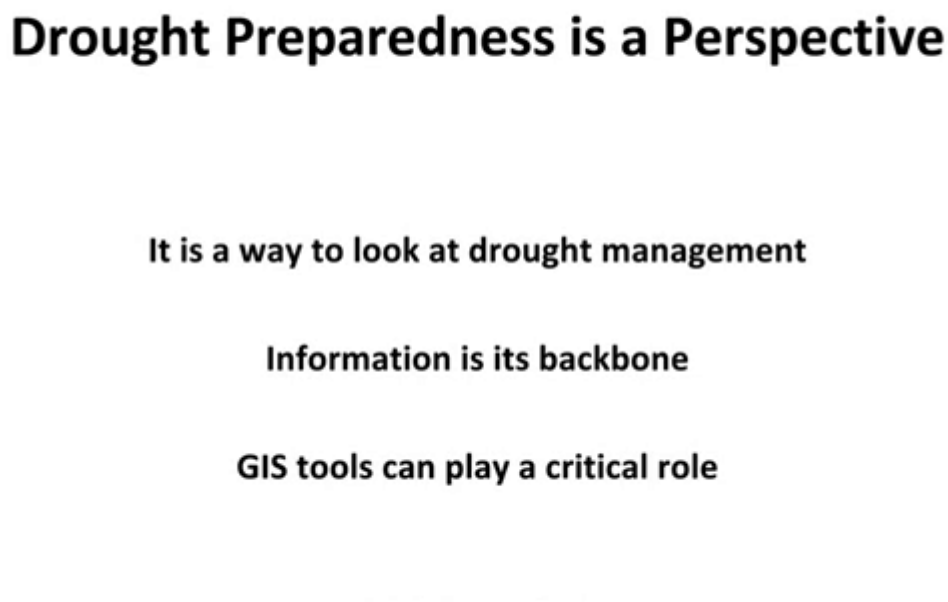

Now, let's appreciate the drought preparedness, it's a perspective, it is a way to integrate a variety of approaches to drought management, it's a new way of looking at drought management, information is the backbone of drought preparedness and GIS tools as important information management tools can play a critical role in drought management as a whole.

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Let's look at some of the systems for drought monitoring available at global scale.

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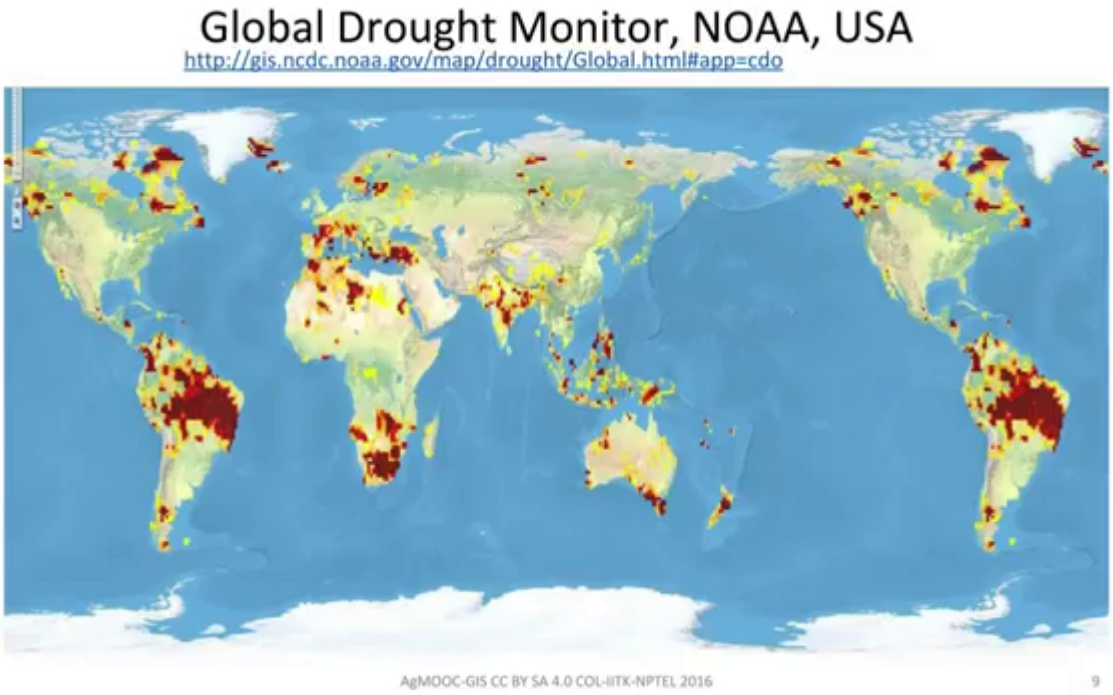

National Oceanographic and Atmospheric Administration (inaudible 00:02:43) N-O-A-A or NOAA has brought out a very important service in recent times for drought monitoring. You should visit the URL listed here some time to get yourself familiar. It's an excellent system that can scale down to county level even if you are not in the United States I would invite you to visit this site and get familiar if you are planning to start your own drought monitoring activities.

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The Food and Agriculture Organization of the United Nations brings drought monitoring systems and issues alerts. These are more aggregated than what the NOAA system offers. These are more international and synthesis multiple points of view.

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The United Nation's Convention to combat desertification is also building a number of monitoring tools for drought. These are going to be heavily science-based and I think we should all keep an eye on the new tools emerging from this very strategic organization.
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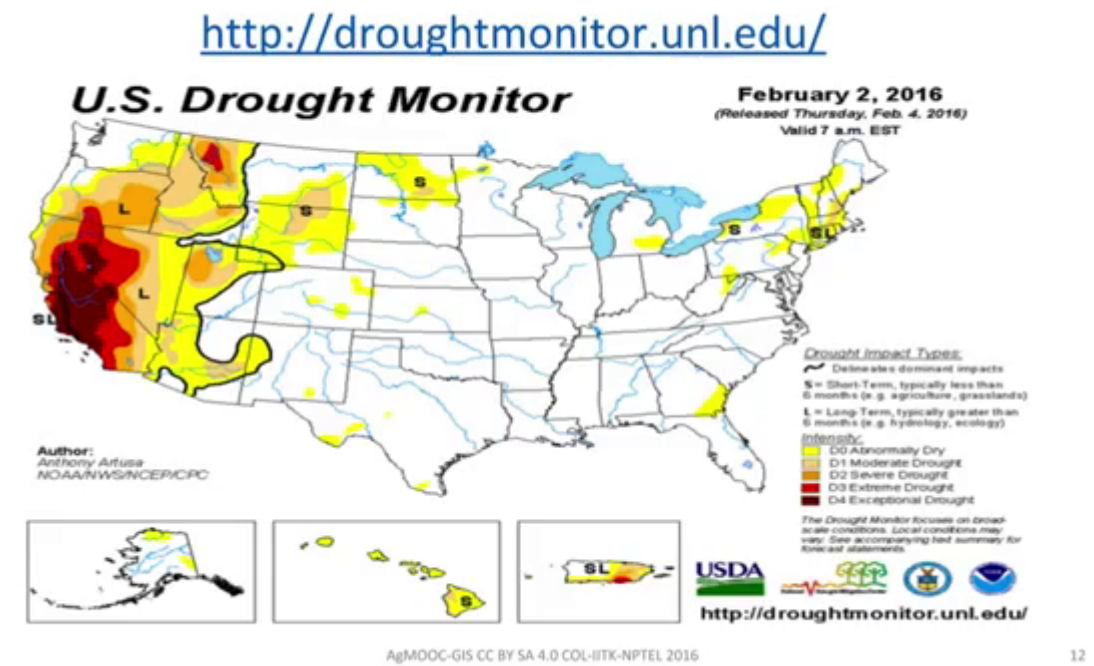

Going to national levels let's go back to United States again. The drought monitor set up at the University of Nebraska at Lincoln it's one of the best in the world. It is a model system. Once again it can scale down to county levels and it can provide considerable details for local level planning as well and they provide weekly alerts which are very very important in

planning and improving preparedness. I would invite you to visit and get yourself very familiar with this system because it's a model system.
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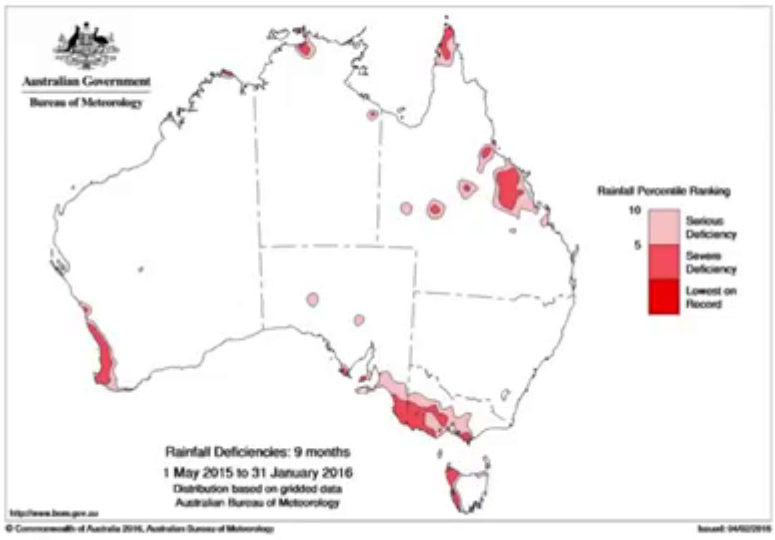
http://www.bom.gov.au/climate/drought/



Australia which is a large country is also highly drought prong. The government there has built again an outstanding system for drought monitoring you can see an aspect of it here with a map interface. I would invite you to visit this site also and get very familiar.
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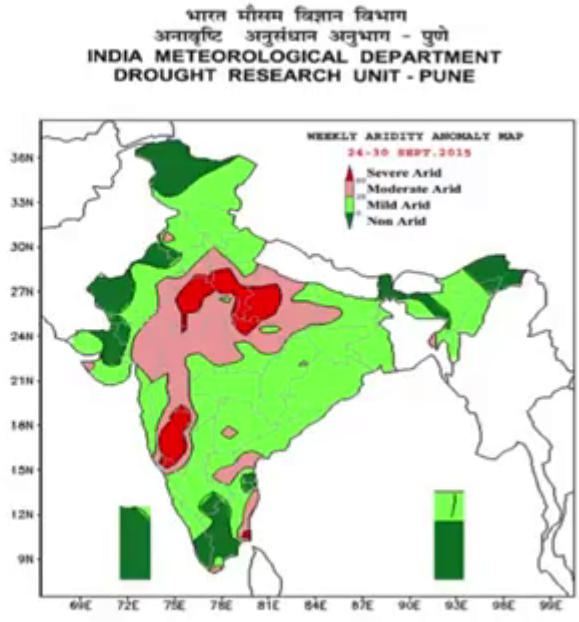
http://www.imdpune.gov.in/research/drought/drought.html



Many students on this course are from India. The India Meteorological Department also comes up with drought monitoring arrangements and some of these are published through

their website which is listed here. I invite you to visit this particular site. The data is highly aggregated and it's periodically updated. This is also very useful in a lot of planning efforts.
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Drought Monitoring on Global and National Scales
Is
Already Mainstream Activity

GIS is a critical tool in it

From what we have seen we would agree that drought monitoring on global and national scales is already a mainstream activity in a number of countries. GIS tools are already playing a very big role in maintaining them.
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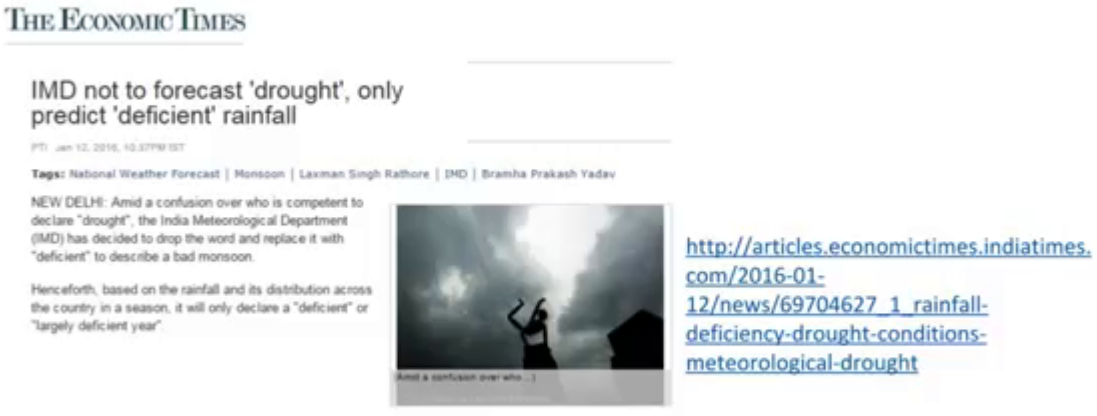

A new challenge starts to arise because of division of responsibilities across agencies. Here is one example. A recent news item from India shows that the India Meteorological Department will no longer forecast drought. This department will forecast only deficiencies in rainfall.

This is because drought relief is anchored in state or provincial governments and their agencies and they believe they should have the first right to define what drought is. And therefore nationally created and expert centric systems and their monitoring data are less important to them than what they are able to gather at local level. How can we overcome these kinds of challenges, because these are not limited to one country they are present in practically every country.
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17

We believe the best way to do the district start looking at data at this micro level, at this rural level where people live and people feel highly vulnerable to drought when it occurs.
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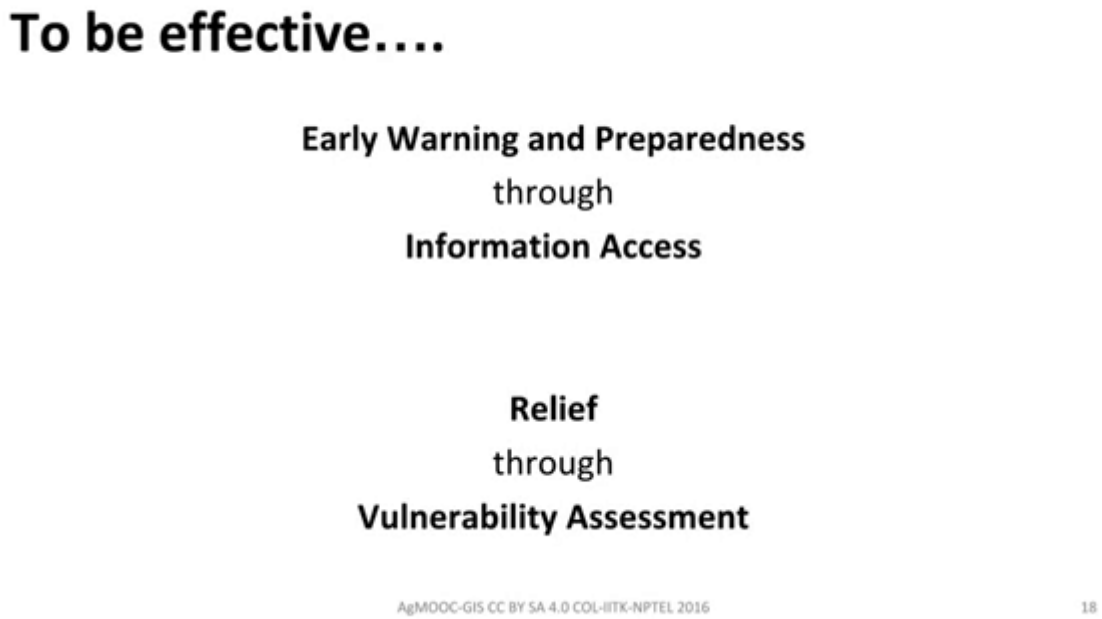

On this scale a variety of systems can be more easily integrated and planning action can begin to be effective early warning and preparedness require a lot of information access and they should be made available through wide variety of channels including the web at that button micro level. Relief always occurs at the micro level and that is based on vulnerability assessment which should also take place at the micro level.
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However as we have seen there is a lot of work taking place at global and national level and much less at the micro level.

Tools are available but local capacities are not. And here is where the audience in this course who are mostly agricultural students and faculty can make a big difference. You can contribute to training individuals, key individuals at local level to make use of GIS tools so they can build local cloud monitoring systems and vulnerability and risk assessment systems. That can make a very big difference to lots of people who undergo or who suffer from the effects of and impact of drought.
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