

USDA Risk Management Agency
Climate Adaptation Plan 2014

USDA Risk Management Agency – 2014 Climate Adaptation Plan

Updated as of June 6, 2014

I. Policy Framework

The central vision of the Federal Crop Insurance Corporation (FCIC) is to provide world class agricultural risk management products.

Consistent with this vision, FCIC serves America's agricultural growers through effective, market-based risk management tools and solutions to strengthen the economic stability of agricultural growers and rural communities. As part of this mission, FCIC through the Risk Management Agency (RMA) administers the Federal crop insurance program. RMA managed over \$123 billion in liability in 2013 and paid over \$11.9 billion in losses from natural disasters (as of May 2014), RMA assists growers manage losses due to insured causes of loss which include but are not limited to natural disasters, drought or flooding . RMA's crop insurance policies provide financial stability for growers and are frequently required by lenders.

In addition to providing crop insurance coverage to growers, Section 522(d) of the Agricultural Risk Protection Act of 2000 authorizes RMA to enter into partnerships with public and private entities for the development of non-insurance risk management tools. These tools are developed for growers' direct use to assist in mitigating and adapting to increased risks from climate change, drought, and other weather related conditions. The partnerships are wide-ranging, multi-year, research projects that offer new and innovative approaches to risk management that extend beyond traditional crops.

As stated in its' Strategic Plan, RMA's goals are:

- Expand existing crop insurance programs where appropriate.
- Improve the effectiveness of existing programs in southern states and other regional or local areas by refining offers to be better tailored to unique types and practices, and where appropriate, adjusting premium rates, transitional yields, initial and final planting dates, acreage reporting dates, coverage conditions, and high risk or other map areas

within each county to recognize structural changes to the risks of growing the crop in those areas.

- Continue to refine and expand the availability of innovative, grid-based, weather-derivative, insurance products to crops and areas that are either uninsured or underinsured.
- Monitor climate change research, to the extent that climate changes emerge over time, and update program parameters such as final planting dates and sales closing dates, to reflect such adaptation or other changes.
- Regional Offices develop and maintain maps used to identify high risk areas, uninsured acreage, and coverage.
- Regional Offices develop special provisions of insurance to address unique crop or regional conditions to enhance the program or address potential program vulnerabilities

II. Planning for Climate Change Related Risk

On November 1, 2013, Executive Order (E.O.) 13653, “Preparing the United States for the Impacts of Climate Change,” Section 5(a) states, “Each Agency shall develop or continue to develop, implement, and update comprehensive plans that integrate consideration of climate change into Agency operations and overall mission objectives...” These 5 Parts are addressed in this USDA, Risk Management Agency – 2014 Climate Adaptation Plan:

Section 5(a)(i) - identification and assessment of climate change related impacts on and risks to the agency’s ability to accomplish its missions, operations, and programs;

RMA’s principle vulnerability to climate change is through the insurance coverage offered through its crop insurance policies. RMA provides coverage to farmers and ranchers for flood, drought, hurricanes and other natural disasters. Climate change is additive with other agronomic risks.

Farmers purchase crop insurance for protection against climate and weather related losses such as flood, drought, hail, etc. There is significant uncertainty about how climate change may affect crop yields – with improvements forecasted in some areas and decreases in others. In areas

where climate changes in a way that is less conducive to growing a given crop, either the growers' insurance guarantee will decrease (and premium rates increase) because of the falling yields or they will stop planting the crop entirely. Either way, the liability exposure of the crop insurance program to climate change tends to be self-limiting.

Agricultural producers have always faced numerous production and price risks, but forecasts of more rapid changes in climatic conditions in the future have raised concerns that these risks will increase in the future relative to historical conditions. In addition to implications for landowner decisions regarding land use, crop mix, and production practices, changing agricultural risks could potentially affect the performance of the crop insurance program. In addition, to the extent that changing climatic conditions are negatively affecting yields over time, there will be greater incentives to conduct research on drought-tolerant, heat-tolerant, and other crop varieties better suited to the changing conditions, which would tend to reduce climate impacts on crop yields. Technological improvements have the potential to decrease, or even negate, the impacts of climate change.

RMA will continue to evaluate and monitor potential risks that climate change presents to the Federal crop insurance program. With over a million crop insurance policies in force **and over \$11.9 billion paid out in natural disaster claims in 2013** and the world's most extensive database of actual farm yields, RMA will monitor program performance and to update program parameters such as the crop planting dates as needed to reflect the changing risks resulting from climate change.

Climate change effect on RMA Operations

- RMA predicts that climate change will only have a minor effect on operations in 16 states where RMA has offices.
- RMA will maintain a workforce that is resilient to weather and other climate change-related disruptions so that the work of the Agency can continue as seamlessly as possible.
- RMA will employ flexible management policies to assist employees impacted by disasters related to climate change (e.g., floods, hurricanes, wildfires) so that they may return to work as quickly as possible.

Section 5 (ii) a description of programs, policies, and plans the RMA has already put in place, as well as additional actions RMA will take, to manage climate risks in the near term and build resilience in the short and long term;

RMA has implemented and invested in a variety of programs and policies over the lifecycle of the federal crop insurance program and specifically to monitor and manage climate risks, these include:

Premium Rating Methodology: RMA continuously reviews and revises its premium rating methodology*. Recent changes include using a shorter historical timeframe to measure risk, and the introduction of a process that explicitly considers weather variables in calculating premium rates. This makes premium rates more responsive to any changes in agronomic risks, whether due to climate change or other factors.

*A document about the rate changes and their overall premium impact for 2013 can be found on RMA's website at <http://www.rma.usda.gov/news/2012/11/2013premiumrateqa.pdf>.

Climate and weather services: RMA has been using climate and weather services provided through a partnership with Oregon State University's PRISM Climate Group (Parameter-Elevation Regressions on Independent Slopes Model) *climate mapping system* to strengthen RMA's underwriting and oversight of the Federal crop insurance program. PRISM provides high quality climate and weather data that will assist RMA with its program underwriting and actuarial responsibilities by developing crop suitability maps based on climate and soils to more accurately assess the production potential of land being farmed; to account for variations in climate due to elevation, rain shadows, coastal effects, temperature inversions and other conditions that may affect crop production; and it is assisting RMA in developing nationwide Bio-fuel resource mapping.

The PRISM web portal has been available to RMA and the insurance companies since spring of 2012, to improve service to producers across the nation as losses can be adjusted quickly and

accurately. To expand RMA's initiative for a strong educational component for producers, PRISM also made a web portal available which is designed for producers to help them better understand their local climate and how changes in the climate effect their farming operations along with other decision support tools. It can also be used by growers to make planting and production decisions every day. The PRISM web portal for producers and general public **went live on October 2013**. It provides public access to a wealth of PRISM climate data, maps, and documentation. The URL for the public website is <http://prism.oregonstate.edu>.

Since it opened on Oct 1, 2013, PRISM has had 31,442 visits; 166,025 dataset downloads and 2.2 TB of data downloaded (not including a new ftp site we opened on Jan 1, 2014).

Catastrophic Loss Procedures - Emergency Loss Procedures for Crops Damaged by Hurricanes and other extreme events. For Example, on October 24, 2005, Hurricane Wilma made landfall in Florida. The President declared 29 counties Federal disaster areas and directed the Department of Agriculture to assist growers affected by the hurricanes. In Florida, RMA reported that Hurricane Wilma resulted in 2,420 citrus fruit crop loss claims totaling \$60.8 million in indemnity payments.

On November 4, 2005, RMA authorized emergency loss procedures via a Manager Bulletin, MGR-05-020, *Emergency Loss Procedures for Crops Damaged by Hurricane Wilma*, intended to streamline certain loss determinations⁶ on specific crops and accelerate the adjustment of losses, expedite processing of loss claims and payments to growers from Hurricane Wilma. The application of the emergency loss procedures was intended to be limited to those situations where the catastrophic nature of the losses was such that not authorizing these emergency loss procedures would result in unnecessary delays in processing claims.

These programs and policies guide RMAs decisions in supporting changes to planting patterns, agronomic practices, new varieties; varieties that can be planted earlier and revising the earliest planting date and final planting dates if planting earlier becomes a common practice. RMA will monitor the establishment of new practices for new areas/crops such as irrigation, limited irrigation, skip rows, cover crops, organic practices, and other insurance offers. Ten Regional

⁶ When losses occur, the Standard Reinsurance Agreement (SRA) requires that Approved Insurance Providers (AIPs) send adjusters into the field to determine the extent of damage and the appropriate losses under the insured's crop insurance policy.

Offices (RO's) will review planting dates periodically and recommend changes to existing final planting dates, if necessary.

Section 5 (iii) a description of how any climate change related risk identified pursuant to paragraph (i) of this subsection that is deemed so significant that it impairs an agency's statutory mission or operation will be addressed, including through the agency's existing reporting requirements;

RMA has not identified any climate change risks that could potentially impair, obstruct, or prevent the success of agency mission activities in the long term. As with all Federal agencies we remain susceptible to natural events that may disrupt operations in the short run, in the event of these cases-such as tornados, hurricanes, winter storms - RMA has developed a Continuity of Operations Plan as a directive to ensure minimal disruption to its mission.

Section 5(a)(iv) a description of how RMA will consider the need to improve climate adaptation and resilience, including the costs and benefits of such improvement, with respect to agency suppliers, supply chain, real property investments, and capital equipment purchases such as updating agency policies for leasing, building upgrades, relocation of existing facilities and equipment, and construction of new facilities;

The real property investments and capital equipment for RMA is limited and appears to have limited exposure to climate change risks. However, the crop insurance program can play a role in helping growers be more adaptive and resilient to climate change by making it easier for growers to invest in adaptation measures.

In general, uncertainty discourages investment. It can take years for an adaptation measure to pay off. Why should growers invest in an adaptation measure if they may go out of business before they can fully enjoy the long-term benefits of that investment? Crop insurance helps reduce that uncertainty, which can promote investment in the adaptation measure. We have frequently heard that banks strongly encourage, or even require, crop insurance in order for a grower to secure an operating loan.

5(a) (v) a description of how RMA will contribute to coordinated interagency efforts to support climate preparedness and resilience at all levels of government, including collaborative work across agencies' regional offices and hubs, and through coordinated development of information, data, and tools, consistent with section 4 of this order.

Understanding Risks: RMA, through USDA's Climate Change Program Office, will continue to evaluate and monitor potential risks that climate change presents to the Federal crop insurance program. RMA will monitor the Federal crop insurance program and administer it in an actuarially sound manner—planting patterns, agronomic practices, new varieties; varieties that can be planted earlier or we will revise the earliest planting date and final planting dates if planting earlier becomes a common practice. RMA will monitor the establishment of new practices for new areas/crops such as irrigation, limited irrigation, skip rows, cover crops, organic practices, and other insurance offers.

Limited Irrigation Practice - 2013: RMA is evaluating how Federal crop insurance currently addresses producers intending to apply reduced irrigation and evaluating the feasibility of establishing a limited irrigation guarantee for producers who apply less water than they may have historically applied to their irrigated acreage. This USDA initiative has led RMA to issue a contract to study initially the impacts of "limited irrigation" on crop insurance. For the study, "limited irrigation" is defined by RMA as "a method of producing a crop by which less water is artificially applied during the growing season by appropriate systems and at the proper times than the quantity of water that was used to establish the irrigated production guarantee or amount of insurance on the irrigated acreage planted to the insured crop." Options for alternative crop insurance approaches for handling reduced irrigation were delivered under the "Limited Irrigation Research Study Contract." RMA issued a new task order for development of one of the contractor's recommended approaches for addressing reduced irrigation. The report is available on the RMA website:

<http://www.rma.usda.gov/pubs/>

<http://www.rma.usda.gov/pubs/2013/insuringirrigationfeasibilityreport508.pdf>.

As part of the Limited Irrigation Research Study Contract study, two listening sessions were held to gather input from interested stakeholders on March 13, 2013 in Colby, Kansas, and on

March 14, 2013, in Kearney, Nebraska. RMA sought input from growers, insurance industry, and other interested stakeholders who were encouraged to attend and share their concerns and feedback about limited irrigation and ideas to address the crop insurance consequences of the changing irrigation water situation in future years.

<http://www.wattsandassociates.com/Press/LIListeningSession.aspx>

RMA will take additional actions to manage climate risks in the near future by monitoring climate data and research to the extent that climate changes over time, RMA will update program parameters (e.g. sales closing dates and earliest and final planting dates and other program dates) as needed to reflect such changes. In addition, RMA will continue to monitor premium rating methodology, loss adjustment standards, underwriting standards, and other insurance program materials to ensure that they are appropriate for new production regions or for changes in practices within existing regions.

New common, science-based guidance on when cover crops should be terminated: In 2013, RMA, Farm Service Agency (FSA), and Natural Resources Conservation Services (NRCS) engaged stakeholders, universities, and the crop insurance industry to make cover crop guidelines straightforward and sensible. New guidance was issued by RMA via a “Cover Crop” Fact Sheet <http://www.rma.usda.gov/pubs/rme/covercrops2.pdf> that contains links to the NRCS web site. This site has a new model that uses local climate data, tillage management and soil data to account for daily crop growth and use of soil moisture. With this information, experts determined the latest possible time to terminate a cover crop, to maximize carbon sequestration and at the same time minimize risk to the cash crop yield. Four cover crop termination zones have been established across the United States. These provide a regionally-appropriate approach to cover crops and the tools to identify the proper cover crop management in an area, taking into account local climate and cropping systems. With this consistent, science-based cover crop guidance, farmers will have more flexibility and a greater opportunity to utilize cover crops on their operations, while staying in compliance across all USDA agencies.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/landuse/crops/?cid=stelprdb1077238>

Working Groups Regarding Climate Change: RMA will contribute to coordinated interagency efforts to support climate preparedness, stakeholders such as the 18 approved insurance providers and over one million crop insurance policyholders – farmers and others with an interest in the Federal crop insurance program to inform them of choices when dealing with climate, and weather related droughts and flood events that may have prevented them from planting insured crops. For example, as production areas shift due to climate change adaptation, RMA has procedures in place for growers to request insurance coverage for insurable crops that is not currently available in a county: <http://www.rma.usda.gov/pubs/rme/requestinginsurance.pdf>

RMA supports coordinated interagency climate adaptation efforts of the following: USDA Global Climate Change Working Group; USDA Regional Climate Hubs Working Group; USDA Drought and Water Team; Environmental Markets Working Group; and RMA also participates on the Council for Environmental Quality (CEQ) Working Group - President's Climate Action Plan - Insurance which includes members from various Federal Agencies, such as NOAA, FEMA, EPA, Treasury, HUD, National Institute for Standards (NIST); USGCRP, since 2013.

RMA plans to integrate climate change adaptation into Federal crop insurance policies, programs, and operations. RMA will increase its' coordination with stakeholders such as crop insurance policyholders and others with an interest in the Federal crop insurance program to inform them of choices when dealing with climate, and weather related droughts and flood events that may have prevented them from planting insured crops.

RMA is monitoring the efforts of the Working Group on Climate Change and Global Warming at the National Association of Insurance Commissioners (NAIC). This group is responsible for reviewing the enterprise risk management efforts by insurance carriers and how they may be impacted by climate change and global warming and investigating and receiving information regarding the use of modeling by carriers and their reinsurers concerning climate change and global warming and its possible impact on investments. Involvement with this committee allows RMA to be aware of climate change-related activities taking place in other lines of property and casualty insurance.

RMA and other USDA agencies engaged stakeholders, universities, and the crop insurance industry to make cover crop guidelines straightforward and sensible. New guidance was issued

by RMA via a “Cover Crop Fact Sheet” that contains website links to the NRCS web site. The NRCS website has a new model that uses local climate data, tillage management and soil data to account for daily crop growth and use of soil moisture. With this information, experts determined the latest possible time to terminate a cover crop, to maximize carbon sequestration and at the same time minimize risks to the cash crop yield. Four cover crop termination zones have been established across the United States. These provide a regionally-appropriate approach to cover crops and the tools to identify the proper cover crop management in an area, taking into account local climate and cropping systems. With this consistent, science-based cover crop guidance, farmers will have more flexibility and a greater opportunity to utilize cover crops on their operations, while staying in compliance across all USDA agencies. Publication on Cover Crops issued, June 2013: <http://www.rma.usda.gov/pubs/rme/covercrops2.pdf>

RMA funded through its Risk Management Education Partnership Program a Webinar on Cover Crops with the National Sustainable Agriculture Information Service, National Sustainable Agriculture Coalition, and NRCS on January 23, 2014, to provide outreach to farmers, agriculture professionals, crop insurance industry and other USDA employees to provide information regarding the new cover crop termination zones. The Webinar discussed the recent efforts to assure greater uniformity and clarity on its policy related to farmers who currently grow “cover crops” or may grow them in the future. In addition, critical questions about how the new policy is designed to answer: When and how can cover crops be terminated without jeopardizing valuable Federal crop insurance coverage of the cash crops grown with them? This policy arose out of the concern that farmers planting cover crops could lose their eligibility for crop insurance coverage of the following crop. The new policy addresses this concern, using science-based cover crop management guidelines accepted across USDA agencies. <https://attra.ncat.org/>

Another method RMA uses to manage climate risks, is to increase the number of press releases, interviews, factsheets and questions and answers pages on RMA’s website to inform stakeholders and others of our policies when dealing with the severe climate and weather events.

For example, RMA's Regional Offices issued press releases to provide information to farmers about new crop insurance procedures in place for "prevented planting" for crop year 2014:

http://www.rma.usda.gov/fields/mn_rso/2014/cipp.pdf

<http://www.rma.usda.gov/news/currentissues/prevented/>

Exhibit A.

Risk Management Agency

Executive Order 13653, Section 5: Federal Agency Planning for Climate Change Related Risk.											
Action Description	Action Goal	Agency Lead	Risk/Opportunity Description	Scale	Timeframe	Implementation Methods	Performance Metrics	Inter-Governmental Coordination	Resource Implications	Challenges/ Further Implications	Highlights of Accomplishments to Date
<p>PRISM Public Website A version of the PRISM portal designed specifically for climate and weather scientists and for farmers was released, October 2013.</p>	<p>To provide a tool that both Risk Management Agency (RMA) and Approved Insurance Providers (AIPs) and farmers (one day) can use.</p>	<p>RMA in partnership with Oregon State University</p>	<p>Assist producers to understand their local weather and climate patterns and to make appropriate adaptations in their farming operations in response to any changes in climate that might occur.</p> <p>Recognizes changes in climate patterns on a timely basis and provides current and historical weather and climate data at a localized level.</p>	<p>National</p>	<p>On-going Released to public in October 2013.</p> <p>Previously available since spring 2012 to RMA and AIPs.</p>	<p>The URL for the public website is http://prism.oregonstate.edu</p> <p>Released on to the public on October 1, 2013.</p> <p>Implemented Phase One of the public portal. The Phase One rollout is the raw data and the intended audience is the climate and weather scientists—</p> <p>Once the scientist test the data and we get the green light to go forward, we will roll-out Phase Two which will be for the farmers and general public.</p>	<p>Web portal oriented to producers and general public</p>	<p>N/A</p>	<p>N/A</p>	<p></p>	<p>Strong Interest from public.</p> <p>RMA and its Partner are tracking usage. Since it opened on Oct 1, 2013, we've had 31,442 visits 166,025 dataset downloads 2.2 TB of data downloaded (not including a new ftp site we opened on Jan 1, 2014).</p>

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RMA implementation of "Cover Crops Termination Guidelines."		RMA, Farm Service Agency (FSA) and Natural Resources Conservation Services (NRCS)	<p>A new model was developed that uses local climate data, tillage management and soil data to account for daily crop growth and use of soil moisture. With this information, experts determined the latest possible time to terminate a cover crop, to maximize carbon sequestration and at the same time minimize risk to the cash crop yield.</p> <p>Farmers will have more flexibility and opportunity to utilize cover crops on their operation, while staying in compliance across USDA.</p>		On-going since 6/2013	<p>Fact Sheets Available on RMA Website.</p> <p>http://www.rma.usda.gov/pubs/rme/covercrops2.pdf</p> <p>Webinar sponsored by RMA Risk Management Education Funding –1/23/2014 to provide education and outreach to farmers, and Ag Professionals on how to use the four cover crop termination zones --established across the United States.</p> <p>Created Frequently Asked Questions webpage in April 2014.</p>		Engage Stakeholders universities, grower groups and the crop insurance industry to figure out how to make guidelines straightforward and sensible.	Crop insurance indemnity payments if suffer loss; NRCS provides incentives to plant cover crops; and FSA provides commodity payments to qualifying farmer.		<p>Cover crops also sequester a significant amount of carbon; Farmers can reap conservation and economic benefits that cover crops can provide.</p> <p>Regional Offices provide updates on Cover Crop Management http://www.rma.usda.gov/fields/il_rs/2014/covercropfaq.pdf</p> <p>Frequently Asked Questions: http://www.rma.usda.gov/help/faq/covercrops2014.html</p>
Emergency Adjustment Procedures for Catastrophic Loss Events		RMA	Enhance ability to provide timely payments to growers	National	As needed.	Establish procedures for Approved Insurance Providers.					
Revise Key Program Dates		RMA	Ensure that the crop insurance program reflects changes in climate and agronomics	National	Annual	Revise actuarial documents to reflect revised dates.					

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New Methods to Assign a Hardiness Zone to Insured Nursery Locations- RMA provides crop insurance coverage for Nursery.		RMA	As a consequence of the changes in the climate, some nursery plants may no longer be insurable in some specific locations or higher insurance premiums may be necessary. Agricultural Research Service released an updated version of the Plant Hardiness Zone Map (PHZM). The PHZM identifies the geographic location where plants are likely to thrive based on the average annual minimum temperature.	National	On-going	Revise insurance policy materials to reference new hardiness zone maps					Informational Memo issued, 9/17/2012 http://www.rma.usda.gov/bulletins/pm/2012/12-045.pdf
Program Expansion		RMA	Ensured the crop insurance coverage is expanded to new areas where crops are grown due to changes in climate and agronomies.	National	Annual	Revise actuarial documents to reflect new county crop expansion.					

RMA Final 6/6/2014