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Agriculture



Federal Crop  
Insurance  
Corporation



Risk Management Agency



Research and Evaluation  
Division

FCIC-22010 (09-2005)

# PROGRAM EVALUATION HANDBOOK

**2006 and Succeeding Crop Years**

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UNITED STATES DEPARTMENT OF AGRICULTURE  
WASHINGTON, D.C. 20250

<b>FEDERAL CROP INSURANCE HANDBOOK</b>	<b>NUMBER: FCIC-22010 (09-2005)</b>
<b>SUBJECT:</b>	<b>OPI: Research and Evaluation Division</b>
<b>PROGRAM EVALUATION HANDBOOK 2006 AND SUCCEEDING CROP YEARS</b>	<b>APPROVED: DATE:</b>  <i>/s/ Tim B. Witt</i> <i>9/2/05</i> <b>Deputy Administrator, Research and Development</b>

THIS HANDBOOK CONTAINS THE OFFICIAL FCIC-APPROVED PROGRAM EVALUATION COMPONENTS FOR THE 2006 AND SUCCEEDING CROP YEARS.

**SUMMARY OF CHANGES/CONTROL CHART**

Major Changes: See changes or additions in text that have been **highlighted**. Three stars (\*\*\*) identify information that has been removed.

# PROGRAM EVALUATION HANDBOOK

## SUMMARY OF CHANGES/CONTROL CHART

Control Chart For: Program Evaluation Handbook						
	SC Page(s)	TC Page(s)	Text Page(s)	Reference Material	Date	Directive Number
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**PROGRAM EVALUATION HANDBOOK**

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# **1. INTRODUCTION**

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This handbook provides a framework for comprehensive evaluations of insurance programs operated by FCIC, both permanent (regulatory) and pilot. The framework is intended to provide guidance for program evaluations, but is not intended to be either exhaustive or exclusive. Many permanent and pilot programs will have unique features and characteristics that warrant use of evaluation criteria not included below. Conversely, some evaluation criteria included in this handbook may not be applicable to particular crops, commodities, and/or plans of insurance. It is the responsibility of the analyst, in consultation with appropriate RMA staff, to determine the evaluation criteria that are to be utilized in a particular program evaluation, including additional criteria not listed in this handbook.

In general, program evaluations are conducted to determine if:

- (1) There are problem areas or issues with the plan of insurance and to identify discrepancies between the policy provisions, procedures, and current practices and technology in the industry;
- (2) There are policy vulnerabilities and weaknesses;
- (3) The crop program is actuarially sound and to make recommendations that assure benefits to producers while achieving actuarial soundness;
- (4) There are possible conflicts in program dates for the crop, type, practices, and areas insured;
- (5) There are any conflicts between the underwriting standards and the underwriting handbook for the particular crop;
- (6) Loss adjustment standards are logical, non-ambiguous, and equitable for producers, insurance providers, and RMA;
- (7) Rates and the rating methodology are adequate for the crop, type and practices for the insured area;
- (8) Prices and the pricing methodology are adequate for the crop, type and practices for the insured area;
- (9) The data acceptance calculations are accurate and sufficient to identify trends or problems in the insurance program;
- (10) There is acceptability of the crop program to producers, insurance providers, RMA, and other interested parties;
- (11) Company marketing plans exist for the crop and a sufficient number of agents and loss adjusters have been trained to effectively deliver the program;
- (12) The program is being delivered efficiently and does not impose unwarranted burdens and costs on producers, insurance providers, and RMA; and
- (13) Appropriate program modifications are available to address problem areas and that any proposed recommendations equitably impact producers, insurance providers and RMA.

# **2. SPECIAL INSTRUCTIONS**

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To provide general instructions for establishing Program Evaluation guidelines for permanent and pilot insurance programs operated by FCIC.

This handbook is written and maintained by:

Office of the Deputy Administrator for Research and Development,  
Research and Evaluation Division  
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If an error is found, notify us in writing at the address given. Outline the error and indicate the proposed correction. Errors may be corrected for the current crop year. Proposed changes should be submitted in writing through your proper organizational channels to the Research and Evaluation Division for consideration.

This handbook remains in effect until superseded by reissuance of **either** the entire handbook **or** selected portions (through slipsheets or bulletins). If slipsheets have been issued for a handbook, the original handbook as amended by slipsheet pages shall constitute the handbook. A bulletin can supersede either the original handbook or subsequent slipsheets.

## **A. ABBREVIATIONS AND DEFINITIONS**

<b>Administrator</b>	The Administrator of RMA.
<b>Act</b>	The Federal Crop Insurance Act (7 U.S.C. 1501-1524), as amended.
<b>Actuarial Documents</b>	The material for the crop year that is posted on RMA's website at the URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a> . These documents show the amounts of insurance or production guarantees, coverage levels, premium rates, insurable crop production practices, insurable acreage, and other related information regarding crop insurance for a crop in a county.
<b>Acceptable Data Source</b>	Publications and data of the RMA, CSREES, NASS, other agencies of the USDA; marketing and promotion organizations supported by public funds or a check-off system; state departments of agriculture; grower organizations or associations whose membership represents 15 percent of growers in the area the organization or association serves; any generally recognized authoritative or professional journal or magazine; institutions of higher education; international agencies such as the Food and Agricultural Organization (FAO) or the World Bank; and farm level data subject to review by qualified crop insurance experts. In addition, the term includes any other source approved by RMA during the execution of a SOW, SOO or TO.
<b>Appendix III</b>	Data Acceptance System Handbook, an appendix of the 2005 Standard Reinsurance Agreement (SRA) that provides instructions and information for reporting reinsured company data to the Risk Management Agency/Federal Crop Insurance Corporation. Also known as the M-13 Handbook.



<b>Board</b>	The Board of Directors of FCIC.
<b>Actuarially Sound</b>	A situation in which the premium rates charged to insured persons are sufficient to cover the present value of expected future losses and to build a reasonable reserve.
<b>CFO</b>	Chief Financial Office of RMA.
<b>CFR</b>	The Code of Federal Regulations. Proposed and final regulations published in the Federal Register also are considered to be part of the CFR.
<b>CIH</b>	A document denoted by RMA as the Crop Insurance Handbook in effect at the time the Program Evaluation is performed. Refer to URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a>
<b>CAT</b>	Catastrophic risk protection coverage, the minimum level of coverage offered by FCIC that is required before the insured may qualify for certain other USDA program benefits unless the insured executes a waiver of any eligibility for emergency crop loss assistance in connection with the crop.
<b>Cost-Benefit Analysis</b>	A process whereby the expected monetary and non-monetary public and private outlays of a proposed action are compared to the expected monetary and non-monetary returns to beneficiaries. This is accomplished by an examination of available raw data and data assumptions, by developing model premises and description, and by estimating the model's results and projecting those results to actual circumstances. A cost-benefit analysis recognizes the principles set forth in the document "Economic Analysis of Federal Regulations under Executive Order 12866" as set forth at the URL <a href="http://www.whitehouse.gov/omb/inforeg/riaguide.html">http://www.whitehouse.gov/omb/inforeg/riaguide.html</a> .
<b>COTR</b>	The Contracting Officer's Technical Representative, an employee of RMA who is authorized to interact with a contractor during execution of a program evaluation.
<b>CRMS</b>	Contract Risk Management Specialists, employees of RMA who specialize in administering Government contracts.
<b>Crop</b>	An agricultural commodity insured under the authority of the Act that is the subject of a Program Evaluation.

<b>Crop Insurance Procedures</b>	Methods approved by RMA to administer approved crop programs. The term includes the Underwriting Guides, the CIH, the LASH, Manager's and R&D Bulletins, or other documents that may be issued by RMA that are applicable to the crop undergoing Program Evaluation. Refer to URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a>
<b>Crop Policy</b>	The legal documents needed to establish a contract between the insured person and the insurance provider, including but not limited to the Common Crop Insurance Policy Basic Provisions, the Crop Provisions, as published in the CFR or by RMA on its website, the Special Provisions, as applicable, and the actuarial documents.
<b>Crop Program</b>	The insurance plan or plans whereby the insurable interests of a producer of a crop are protected.
<b>CSREES</b>	Cooperative State, Research, Education and Extension Service, an agency within USDA, or a successor agency.
<b>DAC</b>	RMA Deputy Administrator for Compliance.
<b>DAIS</b>	RMA Deputy Administrator for Insurance Services.
<b>DARD</b>	RMA Deputy Administrator for Research and Development.
<b>Data Acceptance System (DAS)</b>	The system that receives and accepts or rejects insurance provider data submitted for eligible crop insurance contracts.
<b>Deliverable</b>	A report or other work product, as described in the SOW, that an analyst is to prepare and deliver to RMA.
<b>Delivery System</b>	The companies and their respective agents who are authorized to deliver and service the crop insurance products to the insured producers. This includes National Crop Insurance Services (NCIS) an international not-for-profit organization representing the interests of more than 60 crop insurance companies.
<b>Director</b>	The director of the division or office responsible for developing the program.
<b>ERS</b>	The Economic Research Service, an agency within the U.S. Department of Agriculture, or a successor agency.
<b>Endorsement</b>	An option offered under a Federal crop insurance policy that provides additional coverage or benefits to the insured.
<b>EPR</b>	Earned premium rate, the ratio of total premium divided by total liability.

<b>FAR</b>	Federal Acquisition Regulations.
<b>FCIC</b>	The Federal Crop Insurance Corporation, a corporation chartered by the U.S. Government and administered by the Risk Management Agency of the United States Department of Agriculture (USDA).
<b>FSA</b>	The Farm Service Agency, an agency of the United States Department of Agriculture, or a successor agency.
<b>Generally Recognized</b>	When agricultural or organic agricultural experts, as applicable, are aware of the production method or practice, and there is no genuine dispute regarding whether the production method or practice allows the crop to make normal progress toward maturity and produce at least the yield used to determine the production guarantee or amount of insurance.
<b>IGCE</b>	Independent Government Cost Estimate.
<b>Impact Analysis</b>	A numerical analysis indicating anticipated results if the recommended procedure or methodology is adopted. The analysis may be conducted using experience data or simulations, whichever is most appropriate.
<b>Indemnity</b>	The amount of money that the approved insurance provider owes the insured based on the determination of loss.
<b>Independent Actuary and Independent Researcher</b>	Party(ies) not affiliated with or not having any interest in the daily business operations of the Contractor.
<b>Informational Memorandum</b>	A document issued by RMA to convey supplemental information regarding the Federal crop insurance program to insured producers, reinsured companies, and other interested parties. Refer to URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a>
<b>Insurance Experience</b>	Tables that contain the number of policies earning premium, policies indemnified, units earning premium, units indemnified, net insured acres, liability, total premium, producer premium, subsidy, indemnity, loss ratio, earned premium rate, and loss cost ratio.
<b>Interview</b>	A personal discussion with an interested party by a member of the review team. The purpose is to permit the interviewee to volunteer observations about the crop program.

<b>LASH</b>	Loss Adjustment Standards Handbook, a handbook issued by RMA that provides the general standards with respect to claims for indemnity, in addition to any handbook issued by RMA that provides specific guidance for adjusting losses for the crop under review.
<b>Liability</b>	The total amount that the insurance provider would pay to the insured if there was a total loss.
<b>Limited Resource Farmer</b>	A person with: (a) direct or indirect gross farm sales not more than \$100,000 in each of the previous two years (to be increased starting in fiscal year 2004 to adjust for inflation using Prices Paid by Farmer Index as compiled by National Agricultural Statistical Service(NASS)); and (b) a total household income at or below the national poverty level for a family of four, or less than 50 percent of county median household income in each of the previous two years (to be determined annually using Commerce Department Data) .
<b>Listening Session</b>	Any meeting with agricultural producers, reinsured company personnel, agents and loss adjusters, or other interested parties wherein the participants are free to discuss any issue they deem relevant to the crop program under review.
<b>LCR</b>	Loss cost ratio, the ratio of total indemnity divided by total liability.
<b>LR</b>	Loss ratio, the ratio of total indemnity divided by total premium.
<b>Manager's Bulletin</b>	A document issued by RMA's Administrator to convey information that supplements the crop insurance procedures. Refer to URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a>
<b>Moral Hazard</b>	A situation wherein the insured takes actions that increase the likelihood of receiving an indemnity payment under the terms and conditions of the insurance policy.
<b>Morale Hazard</b>	A situation wherein the insured fails to exercise proper management of the insured crop, thereby increasing the likelihood of an indemnity payment under the terms and conditions of the insurance policy.
<b>MPCI</b>	Multiple Peril Crop Insurance, a type of insurance that provides coverage against multiple causes of loss, such as adverse weather, fire, disease, etc.
<b>NASS</b>	The National Agricultural Statistics Service, an agency of the U.S. Department of Agriculture, or a successor agency.

<b>NRCS</b>	The National Resources Conservation Service, an agency of the U.S. Department of Agriculture, or a successor agency.
<b>Option</b>	A policy provision chosen by the insured that offers additional coverage and benefits beyond those provided by the standard insurance policy.
<b>PEP</b>	Policies earning premium, crop insurance policies on which premiums are earned.
<b>PET</b>	Program Evaluation Tool, a diagnostic instrument used as an aid in identifying issues and concerns with regard to a plan of insurance.
<b>PWS</b>	Performance Work Statement, a performance-based statement of work, as defined in Federal Acquisition Regulation ( <a href="http://www.arnet.gov/far">http://www.arnet.gov/far</a> ) Subpart 37.602-1. The PWS, to the maximum extent practicable: <ul style="list-style-type: none"> <li>(1) Describes the work in terms of "what" is to be the required output rather than either "how" the work is to be accomplished or the number of hours to be provided;</li> <li>(2) Enables assessment of work performance against measurable performance standards;</li> <li>(3) Relies on the use of measurable performance standards and financial incentives in a competitive environment to encourage competitors to develop and institute innovative and cost-effective methods of performing the work.</li> </ul>
<b>Pilot Areas</b>	The counties involved in the pilot insurance program.
<b>Pilot Program</b>	An insurance program that the Board has authorized to be offered as a pilot, but has not yet authorized as a permanent program.
<b>Plan of Insurance</b>	A general structure of insurance that may be extended to one or more crops (e.g., actual production history and revenue coverage).
<b>Producer Premium</b>	The amount of premium paid by the insured.
<b>Program</b>	An insurance plan applied to one crop or commodity. For example, the insurance offered for wheat under the Actual Production History plan is a program. Insuring a second crop under the same plan creates a second program, as does insuring the same crop under a different plan. However, expansion of the program to additional counties does not create additional programs.

<b>Program Evaluation Procedure</b>	An in-depth, detailed process as described in this handbook to identify any problem areas or issues; to make recommendations to limit waste, fraud, and abuse; to assure actuarial soundness; and to determine acceptability of the crop programs to producers, insurance providers, the Government, and other interested parties.
<b>Program Manager</b>	An RMA employee assigned to oversee and manage the research, development, implementation, performance, revision, and evaluation of a new program, and to provide timely reports on its status. If a contract is involved, this person will generally be the COTR.
<b>Program Materials</b>	Basic Provisions, Catastrophic Risk Protection Endorsement, crop provisions, Special Provisions of Insurance, loss adjustment handbook, loss adjustment manual, all applicable actuarial documents, Appendix III, Crop Insurance Handbook, underwriting requirements, and other forms necessary to deliver the program.
<b>PRT</b>	Program Review Team.
<b>Quantify</b>	Assigning measurable impacts to an action. In the context of this handbook, the term means that a recommendation or determination shall be accompanied by a cost-benefit analysis. Quantified recommendations or determinations shall be complete with all raw input data and models, and shall show a bottom line with the overall projected cost of the recommendation or determination and the accompanying benefits with respect to affected growers, RMA, the private sector delivery system, other USDA agencies, taxpayers, and other interested parties where appropriate. The overall cost and benefit must be placed in the context of overall program evaluation requirements.

<b>Record Types</b>	<ul style="list-style-type: none"> <li>(a) Type 10 - Used to establish a policy and provide information regarding the policyholder and entities with a significant business interest. A Type 10 record requires at least one Type 14 record to be submitted with it.</li> <li>(b) Type 11 - Used to establish premium and liability for each acreage line. The record also identifies the land location and allows reporting of common USDA information.</li> <li>(c) Type 14 - Establishes the crop, county, plan code and reports the contract data determined at Sales Closing.</li> <li>(d) Type 15 - Used to record/report APH yield information for designated crops.</li> <li>(e) Type 20-22 - The Type 21 and 22 Records establish the loss amounts for a given policy and the Type 20 Records identifies the application or disbursement of loss payments. Type 20 records are linked by Claim Number to corresponding Type 21/22 records. Therefore, all Type 20 and 21/22 records for a policy from the transaction file will replace all Type 20 and 21/22 records for the policy on the policy database.</li> </ul>
<b>RBUP</b>	Reinsured buy-up coverage, a level of coverage beyond CAT that is offered by FCIC and requires the insured to pay some portion of the total premium applicable to the insurance policy. Also known as additional coverage.
<b>RMA</b>	Risk Management Agency, an agency within the U.S. Department of Agriculture, or a successor agency.
<b>RO</b>	Regional office of RMA.
<b>R &amp; D</b>	Research and Development, the term that describes part of the process of creating a new insurance product. It is also the name of the Office of the Deputy Administrator for Research and Development with accountable divisions.
<b>R &amp; D Concurrence Process</b>	The process whereby the Program Manager submits draft or final documents (e.g., crop provisions, rate methodology, handbooks, etc.) for review and approval to the Divisions and Branches within the office of R & D, Senior Actuary, Senior Underwriter, and Senior Economist, as well as any other interested parties, and reconciles any differences with the party that provided them.
<b>R &amp; D Memorandum</b>	Research and Development Memorandum, memoranda issued by RMA's Deputy Administrator for Research and Development to convey information that supplements the crop insurance procedures. Refer to URL <a href="http://www.rma.usda.gov">http://www.rma.usda.gov</a>

<b>SOO</b>	Statement of Objectives, a short, Government-prepared document incorporated into a Request for Proposals (RFP), which states the basic, high-level objectives of the solicitation. The purpose of a SOO is to provide contractors with maximum flexibility to conceive and propose innovative approaches and solutions. It is provided in the solicitation in lieu of a Government-written work statement. In this approach, the contractors' proposals contain work statements and performance metrics and measures (which are based on their proposed solutions and existing commercial practices).
<b>SOW</b>	Statement of Work, a traditional Government-prepared work statement that describes the work in terms of "what" is to be the required output, in addition to "how" the work is to be accomplished.
<b>SSP</b>	Source Selection Plan, the part of the acquisition planning documentation that guides the evaluation of proposals.
<b>Specialty Crop Coordinator</b>	An employee of RMA assigned to address the needs of specialty crop producers and to provide information and advice in connection with the activities of FCIC to improve and expand the insurance program for specialty crops.
<b>SPOI</b>	Special Provisions of Insurance, the part of the policy (contained in the county actuarial documents) that contains specific provisions of insurance for each insured crop that may vary by county; e.g., planting dates, rotational requirement, exclusions to the policy, etc.
<b>SRA</b>	Standard Reinsurance Agreement, a cooperative financial assistance agreement between FCIC and approved insurance providers that establishes the terms and conditions for subsidy and reinsurance on eligible Federal crop insurance contracts by authority of the Act and promulgated regulations codified in 7 C.F.R. chapter IV.
<b>Subject Matter Experts</b>	Individuals and entities whom the analyst shall contact to obtain feedback on the crop program: CSREES personnel; university personnel; FSA office personnel; growers association representatives; state, regional, and national crop association representatives; insured and non-insured producers (including limited resource farmers); insurance provider representatives; agents; loss adjusters.
<b>Subsidy</b>	The amount of total premium paid by the FCIC on behalf of the insured.



<b>Supportability</b>	Recommendations that are logical, consistent with data collected and assumptions made, sufficiently detailed to justify conclusions, and based upon relevant and complete database(s). Data, data sources, data assumptions, methodologies, findings, determinations, and recommendations are properly cited.
<b>Systemic</b>	With respect to deficiencies, weaknesses, or problems means a condition which is basic to the crop program and is experienced by the whole of it and not just particular areas of the country or other localized situations.
<b>TET</b>	Technical Evaluation Team, the group that evaluates proposals.
<b>TO</b>	Task Order, a specific order placed against a pre-established indefinite quantity-indefinite delivery (IDIQ) contract. IDIQ contracts are usually a set of contracts established to fill recurring needs. Task Orders may or may not be competed amongst the group of IDIQ contractors. Also called Delivery Order.
<b>Total Premium</b>	The total amount of premium for an insured's coverage that is determined by multiplying liability by the unsubsidized premium rate.
<b>Transitional Yield (T-Yield)</b>	An estimated yield provided in the Actuarial Table which is used in calculating average/approved yields when less than four years of actual, temporary and/or assigned yields are available on a crop by county basis.
<b>USDA</b>	U.S. Department of Agriculture.
<b>URL</b>	Uniform Resource Locator, an acronym that identifies specific sites on the World Wide Web.

### **3. PROGRAM EVALUATION**

Program evaluations are performed to determine if RMA is providing sound, effective risk management programs that meet the needs of agricultural producers and to ensure that relevant provisions of the Act are met as effectively and efficiently as possible. Program evaluations examine the past and present performance of a crop program to determine if performance can be improved and if the program has vulnerabilities and weaknesses. In the case of pilot program evaluations, the information obtained will be used to make a determination of whether the program should be continued as a pilot, modified, terminated, or converted to a permanent program.

The Act contains the following provisions pertinent to the program review mission.

- (1) Sec. 502(a) states "It is the purpose of this chapter to promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing such insurance."

- (2) Sec. 508(a) (1) states “If sufficient actuarial data are available (as determined by the Corporation), the Corporation may insure producers of agricultural commodities under 1 or more plans of insurance determined to be adapted to the agricultural commodity concerned.”
- (3) Sec. 508(i) (2) states “Review of rating methodologies. To maximize participation in the Federal crop insurance program and to ensure equity for producers, the Corporation shall periodically review the methodologies employed for rating plans of insurance under this chapter consistent with section 1507(c)(2) of this title.”<sup>1</sup>
- (4) Sec. 508(i) (3) states “Analysis of rating and loss history. The Corporation shall analyze the rating and loss history of approved policies and plans of insurance for agricultural commodities by area.”
- (5) Sec. 506(o) (2) states “The Corporation shall take such actions, including the establishment of adequate premiums, as are necessary to improve the actuarial soundness of Federal multiperil crop insurance made available under this chapter to achieve, on and after October 1, 1998, an overall projected loss ratio of not greater than 1.075.”
- (6) Sec. 522(a) (3) states “The Corporation shall approve a reimbursement...only after determining that the policy is marketable based on a reasonable marketing plan, as determined by the Board.”

The outcome of a program evaluation is a determination that an acceptable insurance risk does or does not exist. An acceptable insurance risk may exist when (1) an actuarially sound premium can be determined and charged to customers who are willing to accept that price, (2) the customers cannot substantially adversely select against the program, (3) moral and morale hazards are avoidable or controllable, (4) there is sufficient interest to spread risk over an acceptable number of insured persons and geographic area, (5) effective loss control methods are available, and (6) the covered perils are identified by frequency and severity.

The program evaluation may result in recommendations to revise any regulation, manual, handbook, guide, directive, or actuarial structure to address identified conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems. Ultimately, the program evaluation identifies needed modifications to assure that the program provides an effective and efficient risk management program to agricultural producers; has documents that are clear, consistent, in accordance with the applicable law and regulations, understandable, predictable, and enforceable; that minimizes the potential for fraud, waste, and abuse; that optimizes risk transfer; is actuarially sound; and that reduces the risk of litigation. In certain cases, the program evaluation may recommend development of a replacement plan of insurance if it is determined that the existing program is not appropriate for the insured commodity and/or does not provide an effective risk management tool.

The following instructions specify a sequence of activities leading to the final program evaluation report. Conducting the statistical and critical analyses will guide the reviewer during the initial data-gathering stages, and provide a framework for documenting the results and recommendations in the final program evaluation report.

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<sup>1</sup>/ Section 507(c)(2) refers to contracting for actuarial, loss adjustment, and other services.

## **A. INITIAL DATA COLLECTION**

The program evaluation may include the following topics:

- (1) Program Summary. Obtain and review information regarding implementation and maintenance of the program. This includes topics such as when and where the program was implemented, by whom the program was developed (RMA, contractor, 508h submission, etc.), program expansions and substantive program changes for all years being evaluated, etc.
- (2) Insurance Experience. Review data provided by RMA. If necessary, request the crop experience data by individual insured for missing years. This includes the types 11, 15, and 21 records as defined in Appendix III of the SRA at a minimum. Data are to be coded in a manner that permits matching of taxpayer identification numbers from year to year.
- (3) Crop production data. Obtain and review the annual estimates of acres planted, acres harvested, and production by county, type, and practice, as appropriate, from acceptable data sources.
- (4) Previous Program Evaluations. Obtain and review copies of any previously performed Program Evaluations or special studies for the crop.
- (5) Relevant research reports. Obtain and review any pertinent economic or industry studies that have been performed by the ERS, land grant and other universities, CSREES, industry trade groups, and other authoritative sources.
- (6) Listening sessions (or interviews). If authorized by the SOW, SOO or TO, schedule and conduct the requisite listening sessions (or interviews) to obtain views and comments from producers, crop insurance personnel, and other interested parties. Specific emphasis should be placed on identifying themes of program vulnerabilities and weaknesses. The listening sessions should be held after the analyst has conducted some preliminary analysis of the crop program and thereby developed working hypotheses regarding potential issues and concerns. The analyst shall comply with the Paperwork Reduction Act of 1995 for any information collection activities (e.g., listening sessions) that may be performed under this program evaluation.
- (7) Correspondence. Obtain and review copies of correspondence related to the performance of the crop program that may have been submitted by interested parties. Review this correspondence to identify systemic and non-systemic deficiencies, weaknesses, or other problems with the crop program. Catalog all observations about the performance of the crop program.
- (8) Audit reports. Obtain and review copies of audit reports that have been provided by the Director of Compliance, the Office of Inspector General, the Government Accounting Office, or other agency that reports the results of a formal or informal review of a particular crop insurance program or of crop insurance overall. Review all audit reports to identify systemic and non-systemic deficiencies, weaknesses, or other problems with the crop program. Rank issues placed into either category based on scope and upon total dollar impact. Catalog all observations about the performance of the crop program.

- (9) Other data. Obtain and review other data as indicated by the findings of the review to examine issues and concerns that arise during its execution.

## **B. PROGRAM EVALUATION COMPONENTS**

This section describes certain analyses that might be performed as part of a program evaluation. Crop specific attributes will determine which analyses are relevant to a particular Program Evaluation. The analyses should be sufficiently in-depth to reach a determination of whether an acceptable insurance risk exists for the crop program as a whole and with respect to particular regions, types or practices. A further objective of these analyses will be to determine whether the plan of insurance is appropriate to the crop and the perils experienced by producers of the insured commodity. To provide an effective risk management program, the plan of insurance should work in a manner that emulates the way a producer of the insured commodity experiences a loss.

### (1) INDUSTRY RESEARCH COMPONENT

The **Industry Research** component provides an overview of the economic situation and outlook for the crop and its various regions of production. The sources for much of the content for this section will be (1) economic and industry studies conducted by the ERS, land grant and other universities, CSREES, and other authoritative sources, as well as industry trade groups and like organizations; (2) crop production and utilization data; and (3) experts knowledgeable about the industry. The purpose of the **Industry Research** component is to identify structural changes (since policy inception or the last program evaluation) in the industry that affect production and marketing of the crop. Changes in acreage, yields, production practices, consumption patterns, imports/exports, trade agreements, etc. should be evaluated with the objective of identifying forces and factors that may impact the terms of the insurance program offered for the crop.

Data related to the economic situation of the industry should be obtained as appropriate. Each crop/industry will be different, but the general expectation is that data will be collected and analyzed to identify characteristics of the industry that may affect policy performance and therefore deserve further analysis.

Although cases will differ, the evaluation should include a times series regression analysis of crop acreages, yields, production, bearing vs. nonbearing acreages by variety, and crop utilization, and producer returns for the same time series as evaluated for the **Insurance Experience** component of this evaluation. Trends and changes in the industry's markets and marketing system, and production technology, varieties, uses and product form can indicate that the existing policy and procedures need to be revised. The descriptive analysis should validate findings from producers and companies.

The final analysis will include documentation of the data and sources used. Ultimately, the final analysis will require narratives supported by charts or graphs that will explain findings and relate these to the data.

## (2) INSURANCE EXPERIENCE COMPONENT

The **Insurance Experience** tables, based on the Summary of Business (SOB) data, will reveal trends, patterns and unique circumstances that should be analyzed further. The data, e.g. numbers of insurance policies, participation, liabilities, premiums, indemnities, and loss ratios should be analyzed over time, e.g. 1995 – 2004, and further analyzed if changes were made to the program during the evaluation period. Patterns of losses should be analyzed further, including causes of loss and differences between counties or regions. Similarly, differences in participation, buy up rates, and loss ratios between counties, or regions and states, or between different sizes of policy units should be determined and explanations pursued. Recent experience should be compared to analogous data for other crop policies to identify anomalies, if any. Participation in the insurance program by type and level (CAT, RBUP) should be analyzed.

The following also should be conducted in the course of a program evaluation. Note that if the available data are insufficient to perform an appropriate review, the analyst shall identify the level of data that RMA should require be reported in order to conduct a proper program evaluation.

- (a) Summarize and report the number of policies earning premium, net acres insured, total premium earned, liability, determined acres, indemnities paid, loss ratio, loss cost ratio, and earned premium rate for the program. On separate reports, summarize program data listed above by year, by state, by county, and by delivery organization.
- (b) Discuss, in detail, participation rates in each area, changes in buying patterns that may provide some insight to the policy performance, and policy distribution among insurance level elections, prices, amounts of insurance, and counties, etc.
- (c) Compare the buying patterns of the policy to the applicable commodity exchange market to determine if the changes in purchase patterns are correlated with changes in price expectations.
- (d) Solicit comments regarding data listed above from the offices of all RMA Deputy Administrators and each delivery organization on the operation of the pilot program.
- (e) Prepare statistical summaries of insured acres relative to planted acres, insured liability to total crop value (substitute season average price to estimate crop liability), and production value of crop to total value of all crops as measures of market penetration of the crop insurance program. Data should be analyzed for all crop years that the present policy has been in effect or for the number of years deemed relevant by the analyst for the program being evaluated. Data are summarized by county, by state, and nationally. Also, consolidate all information into maps, charts, and other forms to summarize results in a manner that highlights important information.

- (f) Prepare statistical summaries of policies in force, policies earning premium, units insured, net acres insured, total liability, total premiums, total indemnities, loss costs, loss ratios, and earned premium rate. Data should be analyzed for all crop years that the present policy has been in effect or the number of years deemed relevant by the analyst for the program being evaluated. Data are summarized by coverage level, by county, by state, and nationally. These statistical summaries should also be categorized by cause of loss, both primary and secondary, as well as by the timing of the losses. Also, consolidate all information into maps, charts, and other forms to summarize results in a manner that highlights important information.
1. These data provide a snapshot of the scope of the crop program in each region. Grouping of loss ratios graphically displayed should be part of the final report.
  2. The data can be used to analyze differences in policy size among regions and other comparisons to facilitate understanding of the crop program. It is recommended that mapping software be used to illustrate the important findings identified in this analysis.
- (g) Prepare statistical summaries of net acres insured, net determined acres, premium, liability, indemnity, loss cost, loss ratio, and earned premium rate on policies with an indemnity. Data should be analyzed for all crop years that the present policy has been in effect or the number of years deemed relevant by the analyst. Data are summarized by coverage level, by county, by state, and nationally. These statistical summaries should also be categorized by cause of loss, both primary and secondary. Also, consolidate all information into maps, charts, and other forms to summarize results in a manner that highlights important information.
1. These data can be compared to the data described previously to determine if differences exist among policies with losses compared to the general population. The analyst may wish to prepare tables that show the information relative to the loss data in absolute numbers and as percentages.
  2. Analyze the policies with losses to determine if the losses whether the losses were due to insured perils or, instead, are due to potential design flaws in the insurance policy (e.g., unclear language, insufficient underwriting rules).
  3. The goal of these comparisons is to determine if, on a unit by unit basis, policies with losses differ materially from the population. It should also be determined whether the indemnities paid were appropriate to the insured perils that occurred over the time period analyzed. If the indemnities do not appear to be appropriate, then the reasons for this should be analyzed.
- (h) Review all active Manager's Bulletins, Research and Development Memorandums and any Informational Memorandums. Note all instances of conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within the document and among other documents.
- (i) Identify what risks were assumed by the private sector and how the business was distributed among the various reinsurance funds available.

(3) POLICY CONTENT AND STRUCTURE COMPONENT

- (a) Review the Crop Policy and Special Provisions in depth. Determine if there any discrepancies between the policy provisions and procedures and current practices and technology in the industry, and identify policy vulnerabilities and weaknesses which can contribute to fraud, waste and abuse. Identify substantive modifications of policy terms and conditions that have occurred during the period of analysis and whether such changes accomplished their apparent intent. Evaluate the following program dates for the crop in each state/county in relation to loss information and the Crop Provisions and SPOI statements to determine if there are conflicts:
1. Sales Closing Date
  2. Insurance Period Dates
  3. Reinsurance Dates
  4. Billing Date
  5. Initial Planting Date
  6. Final Planting Date
  7. Acreage Reporting Date
  8. Production Reporting Date
  9. Contract Change Date
  10. Cancellation/Termination Date.
- (b) Perform analyses of identified and suspected program vulnerabilities through statistical methods and other procedures, and compare the results for the crop program under review with similar crop programs previously analyzed.
1. Program exit and reentry, reliance on T-yields and yield limitations, yield switching, etc. are potential program vulnerabilities for most individual plans of insurance.
  2. Other forms of fraud, waste and abuse may be revealed through the research and may be analyzed with statistical methods.
  3. Perform an analysis of the policy and special provisions of insurance statements to determine if any crop/county specific deviations exist. Review the policy and special provisions statements by state to determine if their application is consistent across growing areas.

- (c) The approach here is to relate problems to the policy provisions and prepare narratives with findings from a detailed review of the policy, program materials and crop insurance procedures. Develop an **Issue Analysis** form (see below) for each problem or issue identified. The form(s) should be presented as an attachment to the final report with a thorough discussion of results contained in the body of the final report.

The goal is to review each section of the Crop Provisions, and relevant regulations, procedures (CIH, LAM, crop LASH) for vulnerabilities. The **Issue Analysis** creates a matrix of interactions between potential issues and problems identified in the previous components, and the specific provisions of the policy. Where it is apparent a potential problem exists, the linkages to the procedures and general policy provisions should be investigated further. The analysis will focus on determining how and why the provisions or procedures create exposure to abuse and concomitantly, on how producers, insurance providers, and the government are involved and affected. Of particular interest will be whether the program provisions and procedures reflect changes in the industry situation and the attendant technology – marketing systems.

#### (4) LOSS ADJUSTMENT STANDARDS COMPONENT

Perform analyses to determine if:

- (a) Loss adjustment standards are appropriate to the crop, cropping practices and production areas;
- (b) Loss adjustment standards are written in sufficient depth to determine understandability of loss adjustment appraisal methods;
- (c) Loss notification timelines are reasonable and indemnity calculations are readily understood;
- (d) The claim settlement process is readily understood; and
- (e) Loss data are reported at a level sufficient to support subsequent analyses, including rate and price reviews.

#### (5) UNDERWRITING STANDARDS COMPONENT

If available, review the underwriting standards handbooks in sufficient depth to identify any conflicts between the policy, special provisions and the handbook. Note all instances of conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within the document and among other documents.

Review the underwriting standards handbook to determine if the documents:

- (a) Are appropriate to the crop, cropping practices and production areas;
- (b) Are consistent with statute, regulations, and policies;



- (c) Comply or conflict with specific rules by crop, crop grouping, or underwriting condition, (e.g., APH instructions, added land instructions, written agreement instructions if applicable, etc.);
- (d) Include appropriate crop/condition specific instructions and underwriting requirements with examples; and
- (e) Include the required forms and adequately describe the use of such required forms and provide a completed example of each form.

(6) **RATING SUFFICIENCY AND ANALYSIS COMPONENT**

Provide a thorough and comprehensive evaluation of the premium rates established for the program being reviewed. The focus of this evaluation component shall be on the adequacy and credibility of the premium rates relative to the insurance experience of the program and information regarding the inherent variability (risk of loss) for the crop, given the plan of insurance. Insurance experience should be examined to determine the extent to which available options or endorsements are being purchased and rated adequately. Whenever possible, insurance experience should be examined both with the options and without options to determine the effect of options or endorsements on experience and to possibly identify any problems that exist due to a particular option or endorsement. The analysis shall provide recommendations on the adequacy, credibility, and reliability of the current premium rates, and recommendations for improving the rating process to assure that rates and rating factors are established in an actuarially sound manner. The analysis used should include how these determinations were made.

For purposes of the rating evaluation, the analyst should:

- (a) Discuss how these determinations were made;
- (b) Examine the data to determine if there are trends in participation, regional differences, or other identifiable characteristics that distinguish participation among regions. As part of the final deliverable the analyst should utilize mapping software to illustrate at a minimum, planted, harvested, and insured acres by county;
- (c) Evaluate the rates and data to determine if the program would be actuarially sound if it were expanded to a nation-wide basis;
- (d) Provide an analysis of whether the current rates are adequate for the underlying risk associated with the program, plus reasonable reserves;
- (e) Document other rating and pricing issues investigated as a result of the research and provide a summary of the recommended changes in the rating and pricing methodology, if applicable;
- (f) If recommending a new plan of insurance for the crop, provide a rate methodology and rates that incorporate program experience and other information; and

- (g) Provide a description of the impact of recommended changes on producers, insurance providers, and the Government. To the extent possible, the analyst should address the quantitative impacts (e.g., changes in program costs and benefits, participation levels, etc.) of the recommended rating changes.

(7) PRICING ANALYSIS COMPONENT

The analyst shall provide an independent evaluation of the prices established for the insured commodity. The analysis shall review the information available to RMA for establishing prices (e.g., ERS reports, the Board package, the policy, loss adjustment procedures, etc.), incorporate additional information not currently used by RMA (if applicable), and research how to best establish the price election (i.e., the pricing methodologies), given the available information. If this analysis suggests the current pricing methodology is inappropriate, the analyst shall provide detailed recommendations for the development of a suitable pricing methodology, taking into account the best available data, prior experience, etc.

For purposes of the pricing evaluation, the analyst should:

- (a) Discuss how these determinations were made;
- (b) Review the material used by RMA to establish prices;
- (c) Identify the time constraints in relation to other forecasted commodity prices;
- (d) Determine whether the prices used for determining the insurance offer are consistent with current and historical commodity prices and are adequate for the underlying risk associated with the program;
- (e) Evaluate the prices to determine if the program would be actuarially sound if it were expanded to a nation-wide basis;
- (f) Provide detailed recommendations for an improved or alternative pricing methodology if analysis suggests that the pricing methodology is not appropriate, is not adequate, or that there is a better methodology;
- (g) Document other pricing issues investigated as a result of the research and provide a summary of the recommended changes in the pricing methodology, if applicable;
- (h) If recommending a new plan of insurance for the crop, provide a pricing methodology that best incorporates available data and other market information in the determination of prices for the new plan of insurance; and
- (i) Provide a description of the impact of recommended changes on producers, insurance providers, and the Government. To the extent possible, the analyst should address the quantitative impacts (e.g., changes in program costs and benefits, participation levels, etc.) of the recommended pricing changes.

(8) PLANS OF INSURANCE COMPONENT

Prepare statistical summaries of county average yields (planted acre basis) as calculated from NASS data or other appropriate sources and the average insured yield for each year included in the APH type 15 (or successor) records, if such data are available for the crop and appropriate to the plan of insurance. To the extent feasible, eliminate multiple records of the same yield that arise due to combining and dividing units. Include a count of the number of unique yields and the acreage for each year. Data should be analyzed for all crop years that the present policy has been in effect or the number of years deemed relevant by the analyst. Also, consolidate all information into maps, charts, and other forms to summarize results in a manner that highlights important information.

- (a) The analyst must make appropriate adjustments whenever the acreage planted for all purposes and the acreage harvested for a particular type (such as corn grain and corn silage) differ materially.
- (b) These analyses seek to discover discrepancies between the sources of data (NASS and APH type 15) and potentially can identify problem areas.
- (c) Whenever appropriate, data are to be analyzed within and among insurance plans. For example, GYC and APH (plan codes 86 and 90, respectively) would be analyzed separately and then combined to evaluate overall performance. This may be done because these two plans essentially are similar in all aspects except premium rates. However, GRP and APH (plan codes 12 and 90, respectively) cannot be combined nor compared one against the other.
- (d) Whenever appropriate, plans of insurance with a price change component (RA, IP, CRC, IIP -- plan codes 25, 42, 44 and 45, respectively, and others as added to the crop insurance program) are analyzed separately. In addition, the premiums and losses are to be converted to loss of yield coverage (i.e., plan code 90 equivalent).
- (e) These plans are converted to loss of yield coverage by setting the harvest price in loss records equal to the base price and recalculating the indemnity. Premiums also are recalculated using the appropriate plan code 90 rate.
- (f) Comparisons may be made to determine the degree to which buyers of the different plans are homogeneous and the degree to which any lack of homogeneity may impact actuarial performance.

(9) DATA ACCEPTANCE REQUIREMENTS (Appendix III)

Perform other analyses that appear relevant considering the data that are available.

- (a) All formulas, calculations and equations used to determine subsidized and unsubsidized premiums, administrative fees, commodity prices, insurance guarantees, liabilities, indemnities, and any other program reporting requirements shall be compatible with data reporting requirements in Appendix III.

- (b) The program application, related risk management contract forms and loss adjustment forms, and instructions for completing and processing such forms shall be compatible with the data reporting requirements in Appendix III.
- (c) All items in the policy and underwriting standards (including acceptance procedures for program applicants, rules for determining program eligibility, acreage requirements, premium requirements, sales closing dates, production reporting requirements, any insurance fund designation, any required determinations of reductions in company reimbursement, inception and termination dates of the policy) shall be compatible with the data reporting requirements in Appendix III.

(10) PROGRAM ACCEPTANCE COMPONENT (interviews or listening sessions)

Conduct a review of the reporting requirements that will identify any additional information that may be useful in determining program acceptance or abuse. Review the comments recorded during the listening sessions (or interviews), if such are authorized. Determine consistent themes. Identify systemic and non-systemic deficiencies, weaknesses, or other problems with the crop program. Catalog all observations about the crop program under review. Required contact information is provided in Exhibit 1. Information obtained from the listening sessions should also be used to complete the Program Evaluation Tool, as discussed below. The analyst shall comply with all requirements of the Paperwork Reduction Act in the conduct of listening sessions.

- (a) Do producers have knowledge of the program?;
- (b) Why producers elected or did not elect to use the program to meet their risk management needs;
- (c) Did the program meet the growers' risk management needs?;
- (d) How the program affected the growers;
- (e) What effect did the program have on the market?;
- (f) What improvements are needed to enhance the effectiveness of the insurance program?;
- (g) Other concerns or issues with the program;
- (h) Impact of program requirements on existing sales and marketing of the crop;
- (i) Are there any issues, policy limitations or other factors associated with the pilot insurance program that have inferred or required the growers to change there farming practices to meet insurability requirements?;
- (j) Is this an appropriate risk management model/plan of insurance for the crop?;
- (k) If not, what type of risk management model/plan of insurance would be appropriate for the crop?;

- (l) Overview of program acceptance;
- (m) Identify any inconsistencies between the program materials, the rating and pricing methodologies, forms completion and/or the delivery of the program; and
- (n) Identify potential for the insurance program to cause overproduction of the crop, leading to market price decline or collapse.

#### (11) PROGRAM EVALUATION TOOL

Complete the Program Evaluation Tool (see Exhibit 2) for each region of production, based on information obtained from the listening sessions, RMA Regional Offices and Compliance Offices, analysis of the program, and other relevant sources. The evaluation tool is designed to address basic insurability questions, such as real and perceived risk, availability of alternative risk sharing mechanisms, etc. Information provided by this tool shall be used to evaluate potential product design problems, inform agency priority setting and resource allocation decisions, and identify potential causes of low participation. In addition, the tool provides a systematic approach for developing and maintaining institutional memory on for the various crop/region combinations. A copy of the completed diagnostic form for each region should be included in an appendix to the report, with a thorough discussion of results contained in the body of the report.

#### (12) PROGRAM DELIVERY COMPONENT

Evaluate the efficiency and efficacy of program delivery and assess the opportunities for program simplification, increased automation, reduced reporting burden, and reduction of costs associated with delivering and administering the program. The program delivery component does not contemplate an evaluation of SRA terms, the relationship between insurance companies and agents/loss adjusters, etc. Rather, this component is specific to the program under evaluation and will consider the information required of producers, data reporting requirements, training requirements, and other aspects of the delivery system needed to service, and administer the program. It will also incorporate information obtained from other components of the program evaluation (e.g., review of program documents, input from listening sessions, etc.) to identify areas in which greater efficiency can be achieved. Based on this evaluation, the analyst shall provide recommendations for achieving greater efficiency and lower costs in delivery of the program to producers. These recommendations must strike an appropriate balance between increasing the efficiency of program delivery and the need to maintain effective program oversight and monitoring

## **4. UNPUBLISHED RMA DATA**

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Unpublished data sets may be obtained from RMA to perform more detailed analyses. These data are defined in Appendix III. The specific data sets will include Type 10, Type 14 with Types 11 and 15, and Type 21, or successor records. Some analyses of particular interest would include:

- (1) Indemnities by unit on a per acre basis;

- (2) Indemnities by commodity practice;
- (3) The timing, frequency and causes of loss;
- (4) Policies and measures by insurance provider; and
- (5) Yield factors and premium determination.

In some cases, comparisons to other industries and/or crop policies can provide benchmarks for judging the significance of findings. However, the analysis will be descriptive and primarily useful in the context of other findings from growers and insurance providers, compliance experience, and from analysis of the industry situation.

The final report should have detailed tables attached, and the report should include narratives supported by charts, graphs, or maps that explain findings and relate these to the data.

## **5. RECOMMENDATIONS**

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Recommendations are developed from the totality of the data and are divided into several categories as specified below. The recommendations provided by the analyst shall be defensible (e.g., logically consistent, appropriate and effective, etc.) and actionable (e.g., sufficiently detailed, able to be implemented, etc.). All recommendations shall be compatible with the data reporting requirements contained in Appendix III of the SRA, or the analyst shall provide appropriate revisions to Appendix III in order to effect such recommendations.

- (1) Recommendations that affect statute are those that cannot be implemented unless the Federal Crop Insurance Act or other Federal law is modified in the appropriate manner.
  - (a) The complete basis for a recommendation involving statutory changes must be described.
  - (b) One or more alternatives to statutory change should be presented if possible. The alternative recommendations obviously will have a lesser ability to have the intended impact. The degree to which the full impact cannot be realized should be described.
- (2) Recommendations that affect regulations are those that involve a change to the Basic Provisions, the Crop Provisions, or any subparts at 7 CFR Part 400.
  - (a) The complete basis for a recommendation involving regulatory changes must be described.
  - (b) One or more alternatives to regulatory change should be presented if possible. The alternative recommendations obviously will have a lesser ability to have the intended impact. The degree to which the full impact cannot be realized should be described.

- (3) Recommendations that affect actuarial documents are those that involve a change to the Special Provisions or the FCI-35 documents.
  - (a) If changes are recommended, the complete basis for a recommendation involving changes to the actuarial documents must be described.
  - (b) Unlike changes that affect statute or regulation, no alternatives are required.
- (4) Recommendations that affect procedures are those that involve a change to the CIH, the LAM, the crop LASH, or other handbooks and documents that convey information for administering the crop program.
  - (a) The complete basis for a recommendation involving changes to the specific handbooks and documents must be described.
  - (b) Unlike changes that affect statute or regulation, no alternatives are required.

## **6. IMPACT ANALYSIS**

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Particular problems and general approaches to improving the crop insurance program will be identified from the preceding analysis. Particular wording, requirements or procedures will be identified. In this component of the review, suggestions for revisions which can reduce the potential for abuse will be specifically analyzed. Revisions of particular wording will be developed to conform to formal requirements. Interactions between other provisions and aspects of the overall program will be analyzed.

Finally, the costs and benefits of any recommended changes will be estimated with a quantitative model, to the extent possible. The model will be developed to provide estimates of the numbers of producers and magnitudes of costs and benefits potentially affected. Similarly, the model will estimate impacts on insurance providers including frequency that the recommended change will have an impact. Finally, the model will estimate the effects on government costs and the potential savings from reduced exposure to fraud, waste and abuse. The parameters, methodology and assumptions will be documented. There will be an overall assessment of cost – benefits for each recommendation

## **7. FINAL EVALUATION REPORT CONTENT**

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The Program Evaluation shall be documented with a formal, written report that contains a description of methods, the results of analysis, and sufficient data to support the findings and recommendations. In particular, the analyst shall submit a written report documenting its evaluation, conclusions and recommendations for the program under review. The scope of the data described in this Handbook is too great for inclusion in a printed copy of the report. The analyst must summarize the data to report those aspects of it that are most salient to the analysis. Maps, graphs, and other techniques that effectively consolidate the information and highlight the meaning will be necessary in the body of the report. A complete dataset utilized for the analysis must be archived using a CD-ROM.

The elements of the Program Evaluation Report are provided below. Additional analyses, evaluation components, etc. as required by the SOW, TO, SOO and/or conducted by the analyst shall be incorporated into the Program Evaluation Report as appropriate.

- (1) The first section of the report shall be an Executive Summary. This summary will contain the recommendations together with a brief justification for each.
- (2) The second section of the report shall contain the findings of the Initial Data Collection review, including the descriptive program summary. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within the document and among other documents will be described.
- (3) The third section of the report shall contain the findings of the listening sessions held in conjunction with the Program Evaluation, if such are authorized. Generally, two listening sessions will be required at each location: one session for producers (including limited resource farmers, insured producers, and non-insured producers) and grower association representatives; and a second for insurance provider representatives, agents, loss adjusters, state, regional, and national crop association representatives, FSA Office personnel, CSREES personnel, and university personnel. Sufficient resources shall be provided to effectively collect comments from listening session participants, including arranging for language interpreters, as appropriate. If conducted by a Contractor, the appropriate Agency personnel shall be notified by electronic mail of the date, time, and location of all meetings with required contacts at least three days prior to the meeting.

In addition to conducting listening sessions as part of its research, the respective RMA Regional Offices and RMA Compliance Offices – separately – shall also be contacted for their comments regarding the program. Comments collected from the listening session shall be categorized as required in Exhibit 1 and shall be concise, accurate, comprehensive, and well organized.

- (4) The fourth section of the report shall contain the findings of the industry research analysis. A primary focus of the discussion should be structural changes in the industry and their potential impact on the crop insurance program under review.
- (5) The fifth section of the report shall contain a thorough discussion of the findings from use of the Program Evaluation Tool. The Program Evaluation Tool is designed to address basic insurability questions, such as perceived risk, availability of alternative risk sharing mechanisms, etc. The tool should be completed for each region of production, based on information obtained from the listening sessions, RMA Regional Offices and Compliance Offices, analysis of the program, and other sources. A copy of the completed diagnostic form for each production/pilot region should be included in an appendix to the report.
- (6) The sixth section of the report shall contain the findings of the Evaluation Components analysis. Themes developed while investigating these topics will be described as will the potential or probable impact upon the crop program's performance. Data contained in this section must be highly summarized. Discussions shall focus on the meaning of the data and not upon describing the numbers. More detailed tables, maps and graphs will be included in an appendix. All conflicts, ambiguities, inconsistencies, gaps, duplications, or other problems that exist within and among the documents should be thoroughly documented.



- (7) The seventh section of the report shall contain the results of the Unpublished Data Report findings detailing the statistical analysis of the performance of the crop program.
- (8) The eighth section of the report shall contain the conclusions and recommendations. Particularly salient conclusions will be whether (1) an acceptable insurance risk does or does not exist, and (2) the plan of insurance is appropriate for the crop. The recommendations shall be subdivided into individual sections dealing with changes in statute, in regulations, in the actuarial documents, and in procedures. Each section shall contain content as described in section 6. If it is concluded that a new (or replacement) plan of insurance should be adopted for the crop, recommendations of sufficient detail to allow development shall be provided in this section.

## **8. REFERENCE MATERIAL**

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### **APPENDICES**

The Program Evaluation report normally will contain Appendices, as described below.

- A. One Appendix will contain the comments sorted by theme, which were gathered at the listening sessions (or interviews).
- B. A second Appendix will contain the completed Program Evaluation Tool for each production region.
- C. A third Appendix will contain summarized statistical data that were included in the analysis. Very detailed data such as county-specific summaries, maps and graphs will be included on a CD-ROM.
- D. Other Appendices may be included as needed.

## **EXHIBIT 1 - Required Contact Information**

The overall objective of the listening sessions is to have as many producers, both insured and uninsured, as possible attend to obtain the best overall results. Generally, two listening sessions shall be scheduled for the convenience of the attendees at each location, one session for producers (including insured and non-insured producers) and grower association representatives; and one session for insurance provider representatives, agents, loss adjusters, state, regional, and national crop association representatives, FSA Office personnel, CSREES personnel, and university personnel for all locations. The Contractor shall provide sufficient resources to effectively collect comments from listening session participants.

Unless otherwise specified in the SOW, SOO, or TO, the analyst shall notify the COTR as to the date, time and location of the listening sessions at least one week prior to notification of the public and other parties. The analyst shall notify the public in each location of the listening sessions through advertising in local newspapers or other media directed at the target audience, at least three weeks in advance of the meetings. In addition, appropriate trade or insurance service organizations and companies servicing the program in the study areas, and local FSA and CSREES offices should also be timely notified (generally 2-3 weeks) before each listening session.

Below provides a list of the required contact feedback information for listening sessions.

- The state, county, location, and date of each contact, list of attendees, and narrative summary of feedback obtained.
- The methodology used (how the contacts were notified, the setting and the location of the contact, number of contacts, how limited resource farmers were identified in each area, how limited resource farmers were contacted, methods and sources used to contact required contacts).
- Data sources used (lists of required contacts and others who provided feedback on the program, including names, addresses, location and date of the contact).
- Any difficulties encountered in obtaining feedback on the program from the required contacts.
- Categorize the feedback by subject as shown below, by county, by date and method of the contact, by source (e.g., producer, grower association, university personnel, marketing groups, RMA, etc.), the number of sources providing the feedback, and the comment. (If no comments were collected on a topic, so state.)
  - Do producers have knowledge of the program;
  - Why producers elected or did not elect to use the program to meet their risk management needs;
  - Did the program meet the growers' risk management needs;
  - How the program affected the growers;
  - What effect did the program have on the market;
  - Other concerns or issues with the program;

- Impact of program requirements on existing marketing, buyer purchasing methods; and claim settlement practices;
- Understanding of the policy terms or conditions;
- Understanding of the loss notification requirements and indemnity calculations;
- Understanding of the underwriting guidelines;
- Understanding of the actuarial documents;
- Understanding of rate calculations;
- Understanding of the calculations to determine the amounts of insurance;
- Understanding of data reporting requirements for Appendix III;
- Understanding of the implications of Waste, Fraud, or Abuse of the program;
- Understanding of the Insurance Providers responsibilities;
- Understanding of forms completions and timelines of reporting information; and
- Any other issues identified that do not fall into the previous categories.

## **EXHIBIT 2 - Program Evaluation Tool**

### **A. INTRODUCTION**

This exhibit is the product of a special project commissioned by the FCIC Board of Directors to examine gaps for existing crop insurance products. The evaluation tool is designed to address issues that RMA personnel and Board members consider in their decision-making. Among these are questions such as: Is the crop exposed to significant yield risk? What about quality risk, price risk, or other risks such as prevented planting? Are producers managing risk using other mechanisms? Has the insurance product suffered from classification problems, moral hazard, or other product design problems?

The development of the protocol is based on three premises:

- (1) The objective of the Board is to obtain the optimal risk transfer, given the resource and institutional constraints that exist for administering federal risk management programs for U.S. farmers. This implies a tradeoff between using resources for new product development versus using them to increase participation for existing products.
- (2) There are many potential causes of low participation. Some crops exhibit very little revenue risk. Even if crops exhibit significant revenue risk, they may be produced as part of a diversified portfolio of crops, livestock, and/or off-farm income. Producers with highly diversified portfolios may not be interested in purchasing crop insurance for specific crops because the revenue risk of the overall portfolio is quite low. Many producers also manage risk using production and/or marketing practices such as irrigation or forward contracting. Of course, it is also possible that the existing federal crop insurance product suffers from product design problems or does not cover the perils of most concern to producers.
- (3) Developing a systematic protocol for evaluating problems with existing products has a significant value for resource allocation decisions that will improve the aggregate risk transfer of the portfolio of RMA product offerings.

### **B. USE OF EVALUATION TOOL**

Consistent with the premises developed above, this report develops a systematic approach for identifying and diagnosing participation gaps, product design issues, etc. The protocol consists of three steps:

- (1) Analyze the crop/region of interest using the evaluation tool.
- (2) Summarize the overall scores from each of the eight diagnostic categories in Step 1.
- (3) Develop a logical response based on the overall scores assigned to each of the eight diagnostic categories in Step 1.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

The first section of the evaluation tool involves 19 questions to provide background on the crop. The section elicits information important for framing subsequent questions regarding farmer risk exposure and the potential for various crop insurance products to transfer a portion of that risk to the insurance pool. In general, these background questions address production processes, market characteristics, and the availability of federally facilitated insurance products. Questions about production processes are segregated according to whether the crop is annual, biennial, or perennial. Nursery is treated as a separate category. After the background for the crop is developed, 8 categories are presented to allow for evaluation of the crop. The first five categories are classified as demand shifters. The next three categories help one assess product design issues. The eight categories include:

- (1) Yield risk;
- (2) Quality risk;
- (3) Price risk;
- (4) Other sources of revenue risk;
- (5) The sufficiency of non-insurance approaches that are available to cope with these risks;
- (6) Potential and realized risk classification challenges;
- (7) Potential and realized moral hazard challenges and associated monitoring issues; and,
- (8) Other problems that may affect insurance participation.

Each demand shifter category (categories 1-5) addresses a general topic that can potentially impact the demand for crop insurance products. Each category in the product design issues can also impact demand, but more fundamentally, these categories also present challenges for product design. A number of framing questions are asked within each of the subcategories. The last question in each of the eight categories asks for an overall assessment of the extent to which that category might impact crop insurance demand.

Once the evaluation tool is completed (Step 1), it may prove useful to provide a visual summary of the core results. A single graph can summarize the results from the overall assessment question for each of the eight categories (Step 2). As an illustration, the categories are listed below along with the question number for the overall assessment question in each category.

### **Demand Shifter Categories**

- (1) Yield Risk — Q 26
- (2) Quality Risk — Q 32
- (3) Price Risk — Q 37
- (4) Other Sources of Revenue Risk — Q 39
- (5) Sufficient Non-Insurance Coping Mechanisms — Q53

### **Product Design Issues Categories**

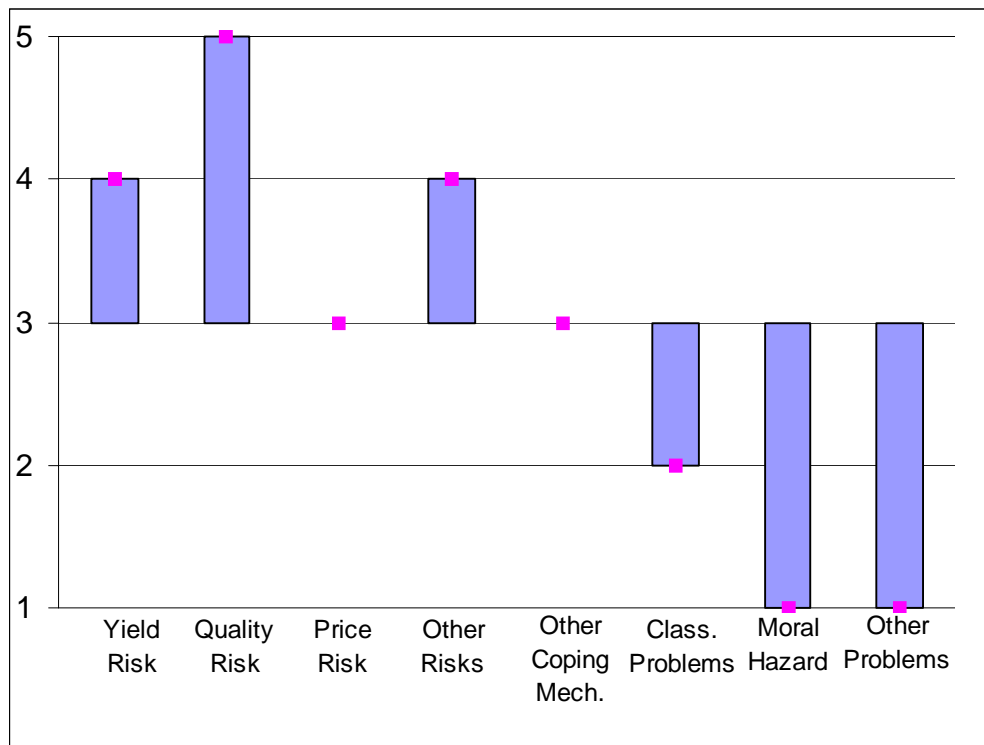
- (6) Risk Classification — Q 58
- (7) Moral Hazard and Monitoring — Q 63
- (8) Problems Affecting Insurance Participation — Q 70.

## EXHIBIT 2 - Program Evaluation Tool (Cont.)

The overall assessment questions are answered using a Likert scale of 1 to 5. The questions are worded such that for the “Demand Shifter” categories higher numbers indicate potentially higher demand for insurance products while lower numbers suggest relatively lower demand. For the “Product Design Issues” categories, higher numbers indicate either a lack of product design problems or a high likelihood of being able to address any existing product design problems. Low numbers indicate more serious product design problems and/or problems that cannot be easily addressed.

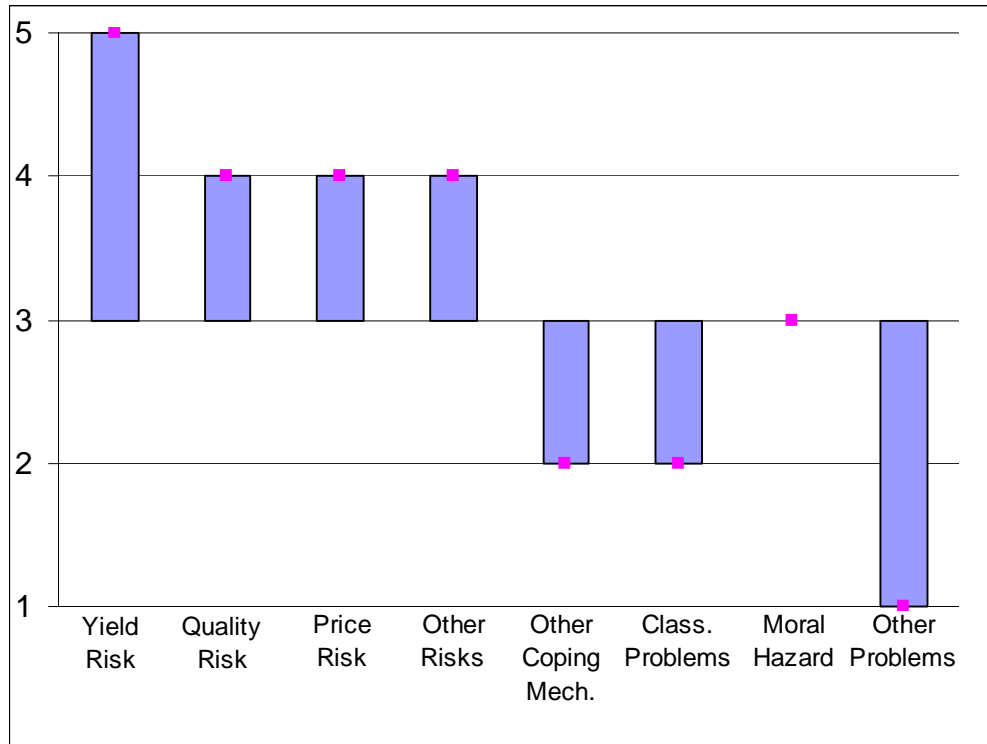
Two examples are presented below in Figures 1 and 2. In Figure 1, the crop has several strong signals to suggest that there would be grower demand for the product. However, there are also very strong signals that significant product design problems are present. Thus, for existing products, these signals may help to understand why participation is low. They may also lead to a decision to withdraw the product. Figure 2 presents a similar picture. However, in this case the signals for demand are stronger and those of product design products are less. In the case of Figure 2, it may be more logical to attempt to fix the problems by redesigning the product.

**Figure 1. Strong Demand and Strong Product Design Problems**



## EXHIBIT 2 - Program Evaluation Tool (Cont.)

Figure 2. Strong Signals for Demand and Some Significant Design Problems



Step 3 of the protocol takes the overall scores from the eight diagnostic categories (graphically illustrated in Step 2) and employs them to work through the generalized decision tree framework illustrated here (Figure 3). The decision tree is intended to facilitate decision-making based on the information gleaned from the diagnostic instrument. However, the diagnostic instrument can be used independently of the decision tree.

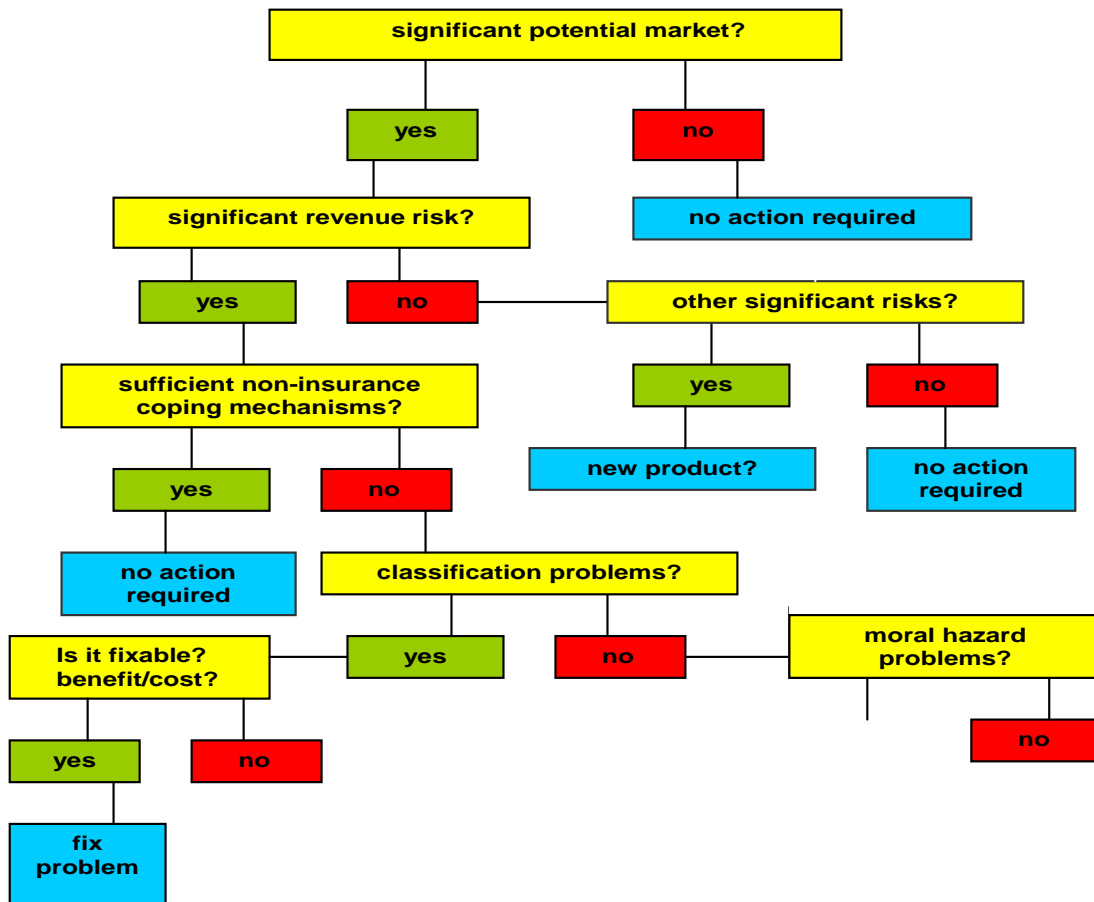
The initial decision node of the decision tree asks whether significant market potential exists for the crop/region combination. Assuming that significant market potential exists, the next decision node asks whether in this region the crop is exposed to significant revenue risk. The answer to this question should be based on a compilation of the overall scores for the first four diagnostic categories (yield risk, quality risk, price risk, and other revenue risks). If there is no significant source of revenue risk, then this likely explains why market penetration has been limited. It may be however, that producers of this crop are exposed to other significant risks that are not covered by existing insurance products. If so, the decision tree poses the question of whether or not it would be possible to develop an insurance product that would cover these other significant risks.



## EXHIBIT 2 - Program Evaluation Tool (Cont.)

If significant revenue risk exists, the next decision node asks whether sufficient non-insurance coping mechanisms exist for the crop-region combination (the fifth diagnostic category). In other words, is market penetration low simply because producers are adequately managing their revenue risks using other means. If the answer is “no,” the next decision node asks whether classification problems might be the cause of the limited market penetration (the sixth diagnostic category). If the answer is “yes,” one next encounters a decision node that asks whether these problems can be fixed and if so, what would be the cost versus benefit calculation for doing so. If the answer is “no,” one next encounters a decision node that asks whether moral hazard problems might be the cause of the limited market penetration (the seventh diagnostic category). Again, if the answer is “yes,” one encounters a decision node that addresses the potential for fixing the problem and the cost-benefit calculations of doing so. If the answer is “no” one encounters a decision node that asks a general question about other problems that might affect participation (the eighth diagnostic category). Again, if the answer is “yes,” one encounters a decision node that addresses the potential for fixing the problem and the cost-benefit calculations of doing so. If the answer is “no,” the decision tree suggests two possible strategies. One is to wait and see if market penetration increases over time. This might be appropriate for insurance offers that are relatively new or have undergone significant changes. The other strategy is to consider developing a new insurance product to replace the current offer for this crop-region combination.

**Figure 3. Decision Tree**



## EXHIBIT 2 - Program Evaluation Tool (Cont.)

### C. USER'S GUIDE FOR EVALUATION TOOL QUESTIONS

#### (1) BACKGROUND INFORMATION

The first 19 questions in the evaluation tool focus on background information. This information is important for framing subsequent questions regarding farmer risk exposure and the potential for various crop insurance products to transfer a portion of that risk to the insurance pool. In general, these questions address production processes, market characteristics, and the availability of federally-facilitated insurance products. Questions about production processes are segregated according to whether the crop is an annual, a biennial, or a perennial. Nursery is treated as a separate category.

#### (2) PRODUCTION PROCESSES

(a) *Annuals* - Three questions are asked.

1. First, is the crop planted multiple times during the crop production year (Q1)? Many vegetable crops are planted multiple times in order to ensure a steady supply of fresh produce to the market. This reduces average crop production year yield and price variability because of the diversification effect of multiple plantings. However, from an insurance perspective, multiple plantings also may present substantial moral hazard challenges. For example, the decision of how many plantings to make will often depend upon how the market is evolving over the course of the season. This creates challenges in designing insurance guarantees.
2. Second, is the crop harvested multiple times from a single planting (Q2)? Multiple harvests reduce average crop/year yield and price variability because of diversification across harvests. As in the case of multiple plantings, multiple harvests present substantial moral hazard challenges. For example, plantings will not be harvested unless the farmer expects revenue to exceed variable costs. In principle, this contingency can be dealt with but it causes substantial difficulties for establishing insurance guarantees. Monitoring costs are also likely increased.
3. Third, what are distinguishing characteristics of prevailing production systems (Q3)? The question addresses whether participation rates are significantly limited because of the lack of sufficiently targeted types and practices. However, it is important to recognize that increased type and practice designations also lead to increased data requirements, increased information technology costs, and increased product maintenance costs. Ultimately, an inability (given cost-benefit considerations) to fine tune type and practice designations for crops grown and marketed under very heterogeneous circumstances may limit the size of the insurance market for those crops.

## EXHIBIT 2 - Program Evaluation Tool (Cont.)

- (b) *Biennials* - The last two questions for annual crops are retained for biennials (Q4, Q5).
- (c) *Perennials* - The last two questions for annual crops retained for perennials (Q6, Q7).

Alternate bearing crops, or those which tend toward alternate bearing, create substantial challenges in defining the basis of an insurance guarantee (Q8). While insurance for many crops is based on a one-year contract, insurance for alternate bearing crops may need to be based on multiple year contracts. The added complexity of multiple-year contracts may reduce moral hazard problems and required premium rates but may also limit the size of the market.

Farmers raising perennial crops such as tree fruits, bushes, and vines face the risk of losing of their capital stock (e.g., trees) due to natural causes such as wind storms, ice storms, flood, and disease. Even modest losses of capital stock are equivalent in their financial impact to substantial annual yield or revenue shortfall losses. Four questions address the probability and magnitude of capital stock losses. The first asks about the economic life of the capital stock (Q9). The second asks about the probability that 10 percent or more of the capital stock would be lost due to natural causes over its economic life. The question also asks for a description of the natural events that would cause such a loss (Q10). Historically, one of the challenges in insuring against losses of capital stock is that loss events are typically low frequency, high severity events. Producer willingness to pay for insurance against capital losses tends to wane as time moves further and further away from past loss events.

The next question asks, how long it would take to reestablish the capital stock to the point where it starts producing salable output (Q11), followed by, how long it would take to reach peak production (Q12). These measures provide a sense of the business interruption costs of foregone revenues associated with capital stock losses.

- (d) *Nursery* - A single question (Q13) addresses critical issues in assessing the potential demand for nursery insurance. Many of the background issues relevant for annuals, biennials, and perennials are also relevant for nursery.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

### **(3) MARKETING**

This series of questions sets the stage for later questions on price risk. Marketing channels and contract availability and design (Q14) have a substantial impact on the nature of the price variability faced by farmers. For example, farmers producing for "thin" spot markets typically face larger price variability. In other instances, there may only be a single processor in the region.

Critical time periods (e.g., marketing windows) (Q15) are important from the perspective of price risk exposure and, often, yield risk exposure. If farmers target production for market windows that offer high potential returns, they typically also assume substantially higher yield risk. For insurance products this frequently creates both risk classification and moral hazard challenges. Market windows also pose substantial challenges for designing revenue insurance products. The next question (Q16) asks about how quality variations are handled within prevailing marketing channels and/or contracting structures.

Federal marketing orders (Q17) are designed to stabilize supplies available to the market and hence, market prices. They also limit the actions farmers can take in marketing their crops. State marketing orders (Q17) set quality standards that define marketable production.

### **(4) RMA-FACILITATED INSURANCE PRODUCTS**

This question (Q19) elicits a list of the insurance products available for the crop in the region, including any region-specific product characteristics. This sets the stage for comparing the risks covered by federally facilitated crop insurance with the risks faced by farmers. It also frames later risk classification, moral hazard, and insurance product design questions.

### **(5) YIELD RISK**

This section and the next three sections contain questions that inquire about various components of revenue risk. Specifically, the sections address yield risk, quality risk, price risk, and other risks. This information is critical in determining the risks that farmers wish to transfer and whether existing insurance products address those risks. For example, if a crop has high price risk but very low yield risk there may be little demand for a yield-risk insurance product for the crop, even if it is competitively priced. Alternatively, a crop may have low yield risk but high quality risk. If the quality risk is largely a function of management decisions, the potential for moral hazard problems may preclude offering insurance to protect against quality losses.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

Yield risk is sometimes measured as the range of possible outcomes. For example, a corn farm may have an expected yield of 140 bushels per planted acre but the range in possible outcomes may be from zero to 180 bushels per planted acre. To facilitate comparison across crops with different expected yields, risk is often measured relative to the expected yield. Thus, continuing the example, relative yield risk for the corn farm may be measured as 180 divided by 140, or 1.29. This measure captures the full range of potential outcomes, however, it may put too much emphasis on extreme outcomes that are possible, but extremely rare. The most common measure of relative yield risk is the coefficient of variation (CV), measured as the standard deviation of yield divided by the mean yield. Continuing the example, if the standard deviation is 40, the CV is 40 divided by 140, or 29 percent.

The first two questions ask about crops in the region with the lowest (Q20) and the highest (Q21) relative yield risk. Identifying these extremes allows one to rank the relative yield risk of other crops compared to these extremes.

The purpose here is not to get precise estimates of relative yield risk for specific crops. Instead, the purpose is to get a “ballpark” assessment of the relative yield risk of this crop compared to others grown in the region.

It is difficult to capture the nature of yield risk in a single measure of relative variation. Imagine two scenarios. In the first, there is substantial variation around the expected yield but little or no likelihood of extreme occurrences. In the second, there is very little variation around the expected yield most of the time but some likelihood of extreme occurrences. Though the situations are quite different, they may have the same yield CV. Therefore, it is important to somehow explicitly highlight low-frequency, high-severity events that have the largest financial impacts when they occur. Also, sometimes low-frequency, high-severity events cause yield losses that are highly correlated across crops on the same farm even if there is typically little yield correlation between the crops. This implies that diversification may not protect against the financial consequences of yield losses caused by low-frequency, high-severity events.

The next two questions (Q22) and (Q23) address exposure to low-frequency, high-severity loss events. Examples of such events would include hurricanes, floods, substantial excess rainfall, and extreme drought. If these, or similar loss events, occur but less frequently than one out of 25 years (or crop cycles), indicate an estimate of the frequency.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

The next question (Q24) focuses on the non-catastrophic yield variability around the expected value. A 5-point scale is provided to score variability relative to the answers provided in Q20 and Q21. Some crops and regions tend to experience recurring patterns of multiple-year sequences of good or bad yields (Q25). These multiple-year sequences create substantial challenges for both farmers and designers of crop insurance products, as they unfortunately tend to occur in regions where most of the farm income derives from one or two crops. Multiple-year events tend to trigger losses for all of the crops produced on the farm. This can create catastrophic farm financial problems for farms. It also creates substantial problems for crop insurance products due to the potential for intertemporal adverse selection. Farmers will be more likely to purchase crop insurance (or purchase higher levels of coverage) in the early years of a bad sequence and more likely to cease purchasing crop insurance (or purchase lower levels of coverage) in the early years of a good sequence. The problem is further compounded by the difficulty of accurately measuring the expected yield to form a basis for the yield guarantee. One-year insurance contracts are not well-suited to these circumstances.

The last question in this section (Q26) asks for an overall assessment of yield risk based on responses to the previous questions. The overall assessment is measured on a five-point scale.

### **(6) QUALITY RISK**

Quality risk refers to shortfalls in the quality of the commodity relative to conventional market standards (e.g., number 2 yellow corn) or standards specified in production and/or marketing contracts (e.g., color, size, firmness, specific gravity). Quality standards are particularly important for both fresh and processed horticultural crops. For farmers, quality risk is sometimes more important than yield risk, particularly in an irrigated production environment. One of the biggest challenges in the design and maintenance of crop insurance products for horticultural crops (e.g., apples) is defining the quality features in the basic policy provisions and in various quality endorsements. It is extremely difficult to design effective crop insurance products that will protect against quality shortfalls. In many cases, it is simply not possible.

Similar to the previous category, the first two questions (Q27, Q28) in this category ask for the crops in a region with the lowest and highest quality risk, respectively. It is more difficult to quantify quality risk than yield risk because measurement is more complicated and the nature of quality risk varies from crop to crop. Even for the same crop, the nature of quality risk varies between production for fresh market and production for processing. For our purposes, shortfalls in potential value — holding constant the price for the market standard, or contract standard — are probably the best measure of quality risk exposure.

The questions on catastrophic quality risk (Q29, Q30), non-catastrophic quality risk (Q31), and the overall assessment of quality risk (Q32) should be handled in the same manner as the analogous questions in the yield risk category.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

### **(7) PRICE RISK**

The first two questions in the price risk category (Q33, Q34) mirror the analogous questions in the yield-risk category. The measures used for defining relative price risk are the same as those used for defining relative yield risk. For crops that are planted and/or harvested multiple times during a crop year, one must define whether the scope of the question is one particular planting and harvest (e.g., one crop production cycle) or a crop year that includes many plantings and harvests. For many crops, within the crop production year, price variability across plantings and harvests may be substantial; however, our focus is on price variation measured by price expectations before the crop production year begins relative to the average realized price across all harvests. Conceptually this is identical to how prices are handled in existing revenue insurance products for exchange traded crops such as corn, soybeans, and wheat.

Horticultural crops that can be stored may be priced well after they are harvested. This makes it more difficult to assess price risk. Indeed, under some cooperative marketing schemes the full price received may not be known for two or three years. Conceptually, we suggest using variation in the difference between the expected price prior to the beginning of the crop production year and the sale price, both net of storage costs.

The third question in this category (Q35) asks for an assessment of relative price risk within the production cycle. A 5-point scale is provided to score variability relative to the answers provided in Q33 and Q34.

Multi-year sequences of low or high prices are common in horticultural crops. This is particularly true for perennials, where there is a significant time period between the planting decision and when the produce comes to market (Q36).

The last question in this category (Q37) asks for an overall assessment of relative price risk and is analogous to earlier questions asking for overall assessments of relative yield risk and relative quality risk.

### **(8) OTHER SOURCES OF REVENUE RISK**

Shortfalls in yield, quality, and price are not the only sources of revenue risk faced by farmers. Other factors, such as prevented planting, are important for some crops. This category asks for a description of any other relevant sources of risk (Q38) and an assessment of their impact on overall revenue risk (Q39).

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

### **(9) EFFECTIVE NON-INSURANCE COPING MECHANISMS**

The demand for various crop insurance products (existing and potential) is influenced by non-insurance coping mechanisms, such as: government price and income support programs; government disaster programs; marketing contracts including futures and options on futures for exchange-traded commodities; crop portfolio and spatial diversification; risk reducing production technologies and practices; and lenders' attitudes, expectations, and rules-of-thumb. This category explores these issues.

While production technologies and practices were addressed earlier in the background section, it is important to distinguish between those technologies and practices that would typically be used regardless of whether or not crop insurance is available and those that the farmer considers as potential substitutes for crop insurance (Q40). For example, under very low rainfall desert conditions crops will always be irrigated. However, under higher rainfall conditions where it is less certain that the benefits of irrigation outweigh the costs, irrigation and insurance may be substitutes. This is true for a wide class of input technologies and practices such as tiling and frost control. The purpose of this question is to highlight these circumstances and to assess the extent to which producers of the commodity use risk-reducing inputs as a substitute for crop insurance.

Federal commodity programs tend to reduce farmer exposure to price risk and thus, revenue risk, for program crops. For this reason, they may also reduce demand for RMA-facilitated crop insurance products (Q41). Federal disaster payments are also often seen as a partial substitute for crop insurance (Q42).

Production contracts are widely used for some crops; particularly horticultural crops. The terms of the contracts vary across crops and regions. Production contracts often reduce a farmer's exposure to some, but not all, risks. For example, a contract may limit a farmer's exposure to price risk but not yield risk or quality risk. In these cases, farmers may be interested in crop insurance if the risks not covered by the production contract are substantial and if the insurance contract is capable of dealing with those risks. The question on production contracts (Q43) has three parts. Under typical production contracts for this crop is the farmer exposed to: (a) production risk; (b) quality risk such that there are significant price penalties if the product does not meet the quality characteristics defined in the contract; and (c) price risk.

Pre-harvest pricing is a mechanism for reducing price risk and hence, revenue risk. For this reason, pre-harvest pricing may reduce demand for crop insurance. At the same time, some forms of pre-harvest pricing increase the financial implications of yield risk since farmers may be forced to make delivery on pre-harvest pricing contracts regardless of their actual production. The question on pre-harvest pricing (Q44) focuses on the extent to which pre-harvest pricing takes place, the nature of pre-harvest pricing arrangements, and the extent to which pre-harvest pricing reduces revenue risk.



## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

The next question deals with the impact on revenue risk of the correlation between price and yield. If price and yield are significantly negatively correlated, revenue variability is reduced and, all other things equal, the demand for crop insurance products (and other revenue risk management instruments) will be reduced. Thus the question (Q45) asks whether yield and price are independent, somewhat negatively correlated, or highly negatively correlated. Yield and price are sometimes highly negatively correlated when crops are produced in niche areas (for example, western Michigan accounts for 75 percent of U.S. tart cherry production) or when specific geographic regions produce for specific market windows.

Some farmers are financially able to self-insure (Q46). Financial leverage, growth strategies, and recent events all impact a farmer's ability to self-insure. Sometimes, farmers and lenders show little interest in crop insurance until they experience a few bad events which cause them to reevaluate their risk bearing capacity and willingness to take risk.

Diversifying the farm enterprise across multiple commodities (crops and/or livestock) has the potential to significantly reduce whole farm revenue variability. Yield shortfalls on one crop may be partially offset by high yields on a different crop. Also, a carefully diversified portfolio of crop enterprises can help farmers manage the revenue effects of price risk when other means of managing price risk are limited. For example, if yield risk for a crop (or crops) is small but price risk is significant, a farmer might choose to have no yield insurance and manage revenue risk due to price variation through diversification.

Two questions are asked to assess the impact of commodity diversification on crop insurance demand. The first asks the percentage of total farm revenue that comes from this crop (Q47). The second asks for a listing of other commodities (crops and/or livestock) that are typically produced along with this crop and an assessment of the correlation between the revenue streams from each of the commodities listed and this crop (Q48). For diversification to generate whole farm revenue risk reduction, the correlation between the commodities must be low. Commodities with highly positively correlated revenue streams act as if they were a single commodity and, as a result, diversification will not significantly reduce revenue risk and the demand for crop insurance.

Many farmers have a diversified portfolio of farm and non-farm revenue streams. Furthermore, part-time farmers are typically less likely to focus on risk management strategies, including crop insurance. Thus, other things equal, the more the crop is produced by part-time farmers, the less demand one would expect for crop insurance products (Q49).

Spatial diversification, like commodity diversification, reduces whole farm revenue variability if the yield correlation across farm parcels is low (Q50). Typically, as farms have gotten larger they have become more spatially diversified. For example, if horticultural farms are producing a crop that is sensitive to freeze risk and different sites have different exposures to freeze, the overall yield risk decreases as the number of sites increases unless the yields from the various sites are highly positively correlated.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

Private-sector insurance products can have a mixed impact on the demand for RMA-facilitated crop insurance products. If the private-sector products have features that complement or require the use of underlying RMA-facilitated crop insurance, they potentially increase demand for RMA-facilitated insurance products. On the other hand, some products may be substitutes or partial substitutes for RMA-facilitated crop insurance. For example, a citrus producer might purchase catastrophic (CAT) yield insurance in combination with a citrus freeze policy. In this instance, the existence of a freeze policy might limit the demand for buy-up crop insurance on citrus. At the same time, the freeze policy would likely complement (and thus, increase demand for) a catastrophic crop insurance policy. Respondents are asked for information on the availability of private-sector products and their expected interaction with FCIC-facilitated crop insurance (Q51).

Lenders can have a substantial impact on farmers' use of crop insurance products. Often, the insured value on growing crops is treated as a current asset on the balance sheet. Lenders' awareness, understanding of, and attitudes toward, crop insurance have an impact on demand, particularly under circumstances where farmers are highly leveraged. For this reason, respondents are asked to assess lenders' attitudes toward RMA-facilitated crop insurance products for this crop in this region using an unfavorable, indifferent, and favorable classification system (Q52).

The final question in this section (Q53) is a summary question asking for an assessment, using a 5-point scale, of the overall impact of non-insurance coping mechanisms on the demand for crop insurance.

### **(10) RISK CLASSIFICATION**

The previous categories focused on factors that can shift demand for crop insurance — provided that the insurance can be priced competitively. The next three sections — risk classification, moral hazard and monitoring, and other problems affecting participation — focus on challenges to getting premium rates right across farms, providing desired insurance product features without being “gamed,” and effectively delivering an insurance product.

We suggest that you consider two overarching questions as you work through these categories: (1) What does the premium rate suggest about the magnitude of the underlying risk and does that calculation seem reasonable? and, (2) Are premium rates consistent with any farm-level information on the underlying risk that may be available? Premium rates, for crop insurance products where there is reasonable participation, are set to balance premiums with expected indemnities based on previous experience. Thus, this is not an issue of whether premium rates are "right" in the sense of being adequate to cover expected indemnities. Instead, the issue is whether premium rates accurately reflect farmers' risk exposure. If for a group of farms the answer is “no,” the amount of crop insurance demanded by that group will be limited.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

Risk classification is a serious challenge in rating crop insurance products. The primary approach used for risk classification is to group potential insurance business into categories with each category having roughly the same risk exposure. For a given deductible structure, the policies in each category will be charged the same premium rate. The first question in this section (Q54) asks if, in this region, there are meaningful differences in relative risk exposure across farms that produce the crop. The question is posed in terms of the extent to which the respondent agrees with the statement that all farms in this region face “about the same risk of loss.” Answers are on a 5-point scale.

The next two questions (Q55, Q56) address potential risk classification problems. These questions focus on whether non-insureds and insureds have different perspectives on the cost of crop insurance coverage. Of course, some individuals choose not to insure because they utilize the non-insurance coping mechanisms discussed in the previous category. In other cases, however, the amount of insurance purchased is limited because some individuals perceive the premium rate as being “too high.” It is possible that existing classification methods may result in premium rates that are appropriate (or even too low) for one group but too high for another group.

The response for Q55 should be interpreted relative to the response for Q56. If the answers are the same for both questions, this does not suggest a risk classification problem. However, if the answer is that premium rates for non-insureds are “much too high” while premium rates for insureds are “much too low” or “about right,” a risk classification problem may exist. In these cases, an appropriate response is to ask whether there are important risk characteristics that are not being considered by current risk classification methods. It is important to remember that non-insureds are choosing not to purchase crop insurance even though the premium is subsidized. This suggests that non-insureds either make extensive use of non-insurance coping mechanisms or the insurance product may suffer from serious risk classification problems.

Farmers may have equal relative risk exposure but be classified differently because the basis for the insurance guarantee is not accurate (Q57). Farmers with “effective” guarantees that result in risk transfer in excess of “nominal” guarantees are likely to be purchasers of crop insurance if the premium rates for the nominal guarantees are about right. By the same token, farmers with effective guarantees less than the nominal guarantees will have less demand for crop insurance. The focus of this question is to assess, using a 5-point scale, whether problems exist with accurately establishing insurance guarantees (e.g., APH yields or expected revenues). Any such problems may limit insurance purchasing.

The last question in this category (Q58) asks for an overall assessment, using a 5-point scale, of the risk classification effectiveness of existing RMA-facilitated crop insurance contracts for this crop in this region.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

### **(11) MORAL HAZARD, MORALE HAZARD, AND MONITORING**

This category attempts to assess whether moral hazard and/or morale hazard may have caused higher crop insurance indemnities. If so, the higher indemnities may now be reflected in higher premium rates that are limiting insurance purchasing.

The first question in this section (Q59) asks, in practical parlance, about the potential for “gaming” each of the crop insurance products that are offered for the crop in the region. A 5-point scale is provided for answers.

The next question (Q60) focuses on the extent to which it is possible and cost effective to monitor any behavior of insureds that might increase yield risk exposure.

A significant challenge in crop insurance design is whether it is possible and cost-effective to monitor the behavior of insureds that can affect crop quality. Processors and other first-handlers who have production contracts with growers have similar monitoring problems. User’s Guide Tables 1 and 2 provide insight into how these entities attempt to manage the moral hazard aspects of quality risk for fresh and processed horticultural crops in California. For this particular case, monitoring is also important to coordinate the timing of planting and harvest across various farmers. The important point however, is that processors and other first-handlers make significant investments in attempting to control moral hazard aspects of quality risk. Any insurance product on crops with high quality risk that does not make similar investments in monitoring will likely be prone to significant moral hazard problems.

The next two questions (Q61, Q62) parallel Q59 and Q60 but from the perspective of quality rather than yield. The last question in this category (Q63) asks for an overall assessment, using a 5-point scale, of moral hazard problems associated with yield and quality risk for each of the existing products for this crop in this region.

### **(12) PROBLEMS AFFECTING INSURANCE PARTICIPATION**

The previous category dealt with both the potential for, and realization of problems associated with risk classification and moral hazard. This category focuses on other problems (either past or present) that may limit demand for RMA-facilitated crop insurance products for this crop in this region.

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

The first question (Q64) asks if there have been significant problems with insurance policy provisions that have limited demand. A subsequent question (Q65) asks for a description of any problems that have resulted in high loss ratios and/or limited demand due to increased premiums. The question also asks whether policy provisions have been changed to adequately address these problems. If policy provisions have not been changed, the question asks what changes could be made to address the problems. In responding to this question, it is important to keep in mind the additional costs (data requirements, information technology, etc.) that may be associated with any changes to policy provisions. It is also important to remember the importance of policy provisions designed to control risk classification and moral hazard problems.

The next two questions (Q66, Q67) deal with the crop insurance delivery system. These questions are designed to assess whether crop insurance purchasing is limited simply because there is little incentive for reinsured companies and/or insurance agents to sell crop insurance for this crop in this region.

In some cases, crop insurance purchasing is limited because the insurance policy does not cover perils that are of primary concern to farmers. The next question (Q68) asks whether this is true for this crop in this region. The question asks for a listing of perils that are not covered by existing crop insurance products along with an evaluation, on a 5-point scale, of growers' concern about each peril. The next question (Q69) asks whether it is possible to develop an insurance product, or modify existing products, to address these perils that are not currently covered by existing crop insurance products. In answering this question it is important to consider the potential for risk classification and moral hazard problems as well as measurement issues and the availability of information that can be used to establish accurate premium rates.

The final question (Q70) asks for an overall assessment, on a 5-point scale, of the likelihood that problems currently limiting participation can adequately be addressed by changes in policy provisions or other policy modifications.

## EXHIBIT 2 - Program Evaluation Tool (Cont.)

**User's Guide Table 1. Quality Assurance Instruments for Fresh Market Commodities**

Commodity	Firms	Quality Assurance Instrument			
		Input Control	Monitoring <sup>a</sup>	Quality Measurement	Residual Claimancy
Asparagus	3	Seed variety, fertilizer, labor, plants, pesticides, financing	20	Self-measurement, government, at market	Yes
Broccoli	2		0	Government	Yes
Carrots	1	Variety, harvest	1	Government	Yes
Grapefruit	3		2	Self-measurement, third party, government	
Grapes	5	Labor	30	Self-measurement, third party,	Yes
Lettuce	3	Variety, fertilizer, plants	9	Self-measurement, third party, government	
Onions	2	Variety, harvest	1	Self-measurement, government	Yes
Oranges	2		20	Self-measurement,	Yes
Potatoes	2		12	Government	Yes
Squash	1	Plants	9	Self-measurement	Yes
Peaches	3	Pruning, harvest	10	Government	Yes
Tomatoes	3	Plants, Planting, harvest	100	Self-measurement, government, third party	Yes

<sup>a</sup> Monitoring is measured by the median number of reported annual visits to a typical grower's field.

*Source: Heuth, B. et al., "Incentive Instruments in Fruit and Vegetable Contracts: Input Control, Monitoring, Measuring, and Price Risk." Rev. of Ag. Econ. 21:374-389.*

## EXHIBIT 2 - Program Evaluation Diagnostic Manual (Cont.)

**User's Guide Table 2. Quality Assurance Instruments for Processed Market Commodities**

Commodity	Firms	Quality Assurance Instrument			
		Input Control	Monitoring <sup>a</sup>	Quality Measurement	Residual Claimancy
Almonds	1		1	Government	Grower Choice
Cabbage	1	Seed, fertilizer, labor	Yes	Self-measurement, third party, government	No
Carrots	2	Variety, seeding rates, harvest, labor	9	Self-measurement	No
Celery	1	Labor	1	Self-Measurement	No
Grapes	24	Labor, pesticides, pruning	15	Self-measurement, third party, government	No
Onions	2	Variety, harvest	6	Self-measurement	No
Oranges	2		6	Self-measurement	No
Potatoes	1		25	Government	No
Peaches	2		25	Government	No
Tomatoes	22	Variety	Yes	Third Party	No

<sup>a</sup> Monitoring is measured by the median number of reported annual visits to a typical grower's field.

*Source: Heuth, B. et al., "Incentive Instruments in Fruit and Vegetable Contracts: Input Control, Monitoring, Measuring, and Price Risk." Rev. of Ag. Econ. 21:374-389.*

## **EXHIBIT 2 - Program Evaluation Tool (Cont.)**

### **D. PROGRAM EVALUATION TOOL**

In the following pages, the questions that comprise the Program Evaluation Tool are presented. All questions that are applicable to the particular crop, region, and plan of insurance should be completed by a qualified individual(s) knowledgeable about the crop, its production and marketing practices, the risk profile of producers, etc. When used in the conduct of a program evaluation, the information obtained from listening sessions and the analyst's research and evaluation activities should be used to inform and complete the questionnaire. Any use of the Program Evaluation Tool by the Government, or by a contractor in fulfillment of a contract with the Government, is to be in strict accordance with the requirements imposed by the Paperwork Reduction Act.



## Program Evaluation Diagnostic Questions

**Region** \_\_\_\_\_

**Crop Market** \_\_\_\_\_  
**(fresh, processed, sold for animal feed, etc.)** \_\_\_\_\_

### Background Information

#### Production Processes

##### Annuals

1. Is the crop planted multiple times during a crop production year? If yes, explain:	<i>Yes</i>	<i>No</i>
2. For a single planting, is the crop harvested multiple times during a crop production year? If yes, explain:	<i>Yes</i>	<i>No</i>
3. Describe distinguishing characteristics of prevailing production system(s) for this crop (e.g., practices such as double crop, fallow, irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.		

##### Biennials

4. Is the crop harvested multiple times during a crop production year?	<i>Yes</i>	<i>No</i>
5. Describe distinguishing characteristics of prevailing production system(s) for this crop (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.		

##### Perennials

6. Is the crop harvested multiple times during a crop production year? If yes, explain:	<i>Yes</i>	<i>No</i>
7. Is the crop alternate bearing?	<i>Yes</i>	<i>No</i>

8. Describe distinguishing characteristics of prevailing production system(s) for this crop (e.g., practices such as irrigation, regional differences in climate or soils, etc.). Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

9. What is the economic life of the capital stock (trees, vines, etc.)? \_\_\_\_\_years

10. Over its economic life, what is the likelihood that 10 percent or more of the capital stock would be lost due to natural causes? Describe: \_\_\_\_\_%  
(probability of loss)

11. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it starts producing salable output? \_\_\_\_\_years

12. If capital stock is lost, how long will it take to reestablish the capital stock to a point where it is at peak production? \_\_\_\_\_years

**Nursery**

13. Describe distinguishing characteristics of prevailing production system(s) for nursery crops in this region. Discuss, particularly, features that are critical in assessing potential demand including potential issues with practices and types.

**Marketing**

14. Describe typical marketing channels and/or contracting structures for this crop.

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15. In this region are there critical time periods (i.e., marketing windows) when producers hope to market this crop? If so, describe.

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16. Within the marketing channels and/or contracting structures mentioned above describe how quality variations are handled (e.g., off-grade apples in a fresh market system may be processed for juice).

17. In this region, do federal supply control marketing orders exist for production of this crop?  Describe:	<i>Yes</i>	<i>No</i>
18. In this region, do state quality marketing orders exist for production of this crop?  Describe:	<i>Yes</i>	<i>No</i>

**RMA-Facilitated Insurance Products**

19. In this region, what RMA-facilitated insurance products are currently available for this crop? List all:

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**Yield Risk**

20. In this region what are examples of crops with very *low relative* yield risk? Relative risk is used to adjust absolute magnitudes that vary across crops to a relative level to facilitate comparability (roughly, a measure of variation divided by the mean level).

21. In this region what are examples of crops with very *high relative* yield risk?

22. Is this crop exposed to catastrophic risks that would reduce yields by 50 percent or more?	Yes	No
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23. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>

24. Characterize yield risk for this crop *ignoring the catastrophic yield risk(s) described earlier*. On a scale from one to five, if the low relative yield risk crops identified earlier were one, and the high relative yield risk crops identified earlier were five, what number would you assign to the non-catastrophic yield risk associated with this crop in this region?

<b>1</b> very low relative yield risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high relative yield risk
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25. In this region, do producers tend to experience multiple-year sequences of good yields or bad yields for this crop? If yes, describe what causes these multiple-year sequences.	Yes	No
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26. On a scale from one to five, where one is very low yield risk and five is very high yield risk, provide an overall assessment of yield risk faced by producers of this crop in this region.

<b>1</b> very low yield risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high yield risk
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**Quality Risk**

27. In this region what are examples of crops with very **low** quality risk?

28. In this region what are examples of crops with very **high** quality risk?

29. Is this crop exposed to catastrophic quality risks that would reduce the average price received by 20 percent or more?	Yes	No
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30. If the answer to the previous question is yes, describe these risks. If no, proceed to the next question. Over 25 years (or crop cycles) approximately how often would you expect such catastrophic quality losses to occur?

<i>Description</i>	<i>Years (or crop cycles) out of 25</i>

31. We now want to characterize quality risk for this crop *ignoring the catastrophic quality risk(s) described earlier*. On a scale from one to five, if the crops with very low risk of quality problems identified earlier were one, and the crops with very high risk of quality problems identified earlier were five, what number would you assign to the quality risk associated with this crop in this region?

<b>1</b> very low quality risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high quality risk
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32. On a scale from one to five, if one is very low quality risk and five is very high quality risk, provide an overall assessment of quality risk faced by producers of this crop in this region.

<b>1</b> very low quality risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high quality risk
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**Price Risk**

33. In this region what are examples of crops with very **low relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

34. In this region what are examples of crops with very **high relative** price risk *within the production cycle*? That is, variation in price between pre-plant for annuals (or, equivalent for perennials) and sale. (Similar concept to IP and RA for crops with futures markets).

35. On a scale from one to five, if the low price risk crops identified earlier were one and the high price risk crops identified earlier were five, what number would you assign to the relative price risk (within the production cycle) associated with this crop in this region?

<b>1</b> low price risk crop	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> high price risk crop
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36. In this region, do producers tend to experience multiple-year sequences of high prices or low prices for this crop?

If yes, describe.

<i>Yes</i>	<i>No</i>
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37. On a scale from one to five, where one is very low price risk and five is very high price risk, provide an overall assessment of price risk (within the production cycle) faced by producers of this crop in this region.

<b>1</b> very low price risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high price risk
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#### Other Sources of Revenue Risk

38. For this region, describe other factors that affect revenue risk for this crop (e.g., prevented planting).

39. On a scale from one to five, where one is very low risk and five is very high risk, provide an overall assessment of risk sources other than yield, quality, and price risks faced by producers of this crop in this region.

<b>1</b> very low risk	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high risk
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#### Sufficient Non-Insurance Coping Mechanisms

40. On a scale from one to five, where one is very low and five is very high, assess the extent to which producers of this commodity in this region use risk-reducing inputs as a substitute for crop insurance.

<b>1</b> very low	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> very high
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<p>41. Are government crop programs (e.g., marketing loans and counter-cyclical payments) available for this crop?</p> <p>Describe:</p>	<p><i>Yes</i></p>	<p><i>No</i></p>
<p>42. In this region, is there a history of federal disaster payments for this crop?</p> <p>Describe:</p>	<p><i>Yes</i></p>	<p><i>No</i></p>
<p>43. Approximately what percentage of the total production of this crop is under production contract with a first handler or processor?</p> <p><i>Describe contracts:</i></p> <p>a. Under the terms of a typical production contract for this crop, is the grower exposed to <i>production risk</i> (i.e., the grower must deliver on the contract even if production shortfalls occur)?</p> <p>b. Under the terms of a typical production contract for this crop, is the grower exposed to <i>quality risk</i> (i.e., there are significant price penalties if the product does not meet the quality characteristics specified in the contract).</p> <p>c. Under the terms of a typical production contract for this crop, is the grower exposed to <i>price risk</i> (i.e., prices for specific quality characteristics are not specified in the contract)?</p>	<p>_____ %</p>	
	<p><i>Yes</i></p>	<p><i>No</i></p>
	<p><i>Yes</i></p>	<p><i>No</i></p>
	<p><i>Yes</i></p>	<p><i>No</i></p>
<p>44. In this region, approximately what percentage of the total production of this crop is priced prior to harvest (may or may not be tied to a production contract)?</p> <p>Describe:</p>	<p>_____ %</p>	
<p>45. When corn farmers in the Midwest experience low (high) yields, they can often expect higher (lower) market prices (i.e., prices and yields are very negatively correlated). This moderates the revenue impacts of low yields. In contrast, for corn farmers in the Southeast there is very little relationship between their yields and market prices (i.e., prices and yields are independent). In this region the price and yield for this crop are (circle one):</p> <p><i>Independent</i>                      <i>Somewhat Negatively Correlated</i>      <i>Highly Negatively Correlated</i></p> <p>Describe:</p>		

46. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement:

“In this region, producers of this crop are financially able to self-insure against production losses.”

<b>1</b> strongly disagree	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> strongly agree
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Describe:

47. For a typical grower of this crop, approximately what percentage of the total farm revenue would be attributable to this crop?	_____ %
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48. What other commodities would typically be produced on a farm that produces this commodity? What is the correlation between revenue from these other commodities and the revenue from this commodity? For correlation use a scale of one to five, where 1 is “strongly negatively correlated,” 2 is “negatively correlated,” 3 “independent,” 4 is “positively correlated,” and 5 is “strongly positively correlated.”

<i>List:</i>	<i>Correlation</i> (assign a number between 1-5)

49. In this region, approximately what percentage of the total production of this crop is produced by part-time farmers who have full-time employment off the farm?	_____ %
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50. On a scale from one to five, where one is “strongly disagree” and five is “strongly agree,” provide your reaction to the following statement:

“In this region, producers of this crop attempt to manage production risk by spreading their production over several geographic locations.”

<b>1</b> strongly disagree	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> strongly agree
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Describe:

51. In this region, what private-sector insurance products (if any) are currently available for this crop?

*List all:*

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52. Characterize how agricultural lenders in this region view the available RMA-facilitated insurance products for this crop. “Unfavorable” implies that lenders actually discourage borrowers from purchasing the product while “favorable” implies that lenders strongly encourage and often require borrowers to purchase the product. If multiple insurance products are offered, answer for each product.

*Unfavorable*

*Indifferent*

*Favorable*

Describe:

- 
53. On a scale from one to five, where one is very high and five is very low, assess the sufficiency of non-insurance coping mechanisms for producers of this crop in this region.

<i>1</i> high availability	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i> low availability
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### Risk Classification

54. On a scale from one to five, where one is strongly disagree and five is strongly agree, provide your reaction to the following statement:

“In this region, no producers of this crop are really any more or less risky than any others. They all face about the same risk of loss.”

<i>1</i> strongly disagree	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i> strongly agree
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Describe:

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55. In this region, *for those who are currently **not** insured*, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

*Much Too Low*

*About Right*

*Much Too High*

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

- 
56. In this region, *for those who currently are insured*, would you say that premium rate on the existing RMA-facilitated insurance products for this crop are “much too low,” “about right,” or “much too high”? If more than one RMA insurance product is offered, answer for each product.

*Much Too Low*

*About Right*

*Much Too High*

If you answered that premium rates are “much too high,” explain why (or how) you think this happened.

57. For this region, to what extent does the system used to establish the guarantee (e.g., APH yield or expected revenue) for this crop match the true value of the production at risk? An answer of one indicates that the system used to establish the guarantee does a very poor job of matching the true value of the production at risk. An answer of five indicates that the system used to establish the guarantee does a very good job of matching the true value of the production at risk.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
very poor job				very good job

58. On a scale from one to five, where one is very low and five is very high, assess the effectiveness of existing RMA-facilitated insurance products in accurately classifying potential policyholders according to their loss exposure (i.e., higher risk growers pay higher premiums while lower risk growers pay lower premiums).

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
very low				very high

### Moral Hazard and Monitoring

59. Yield variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated crop insurance product for this crop on a scale from one to five, where one implies that variation in yield is almost exclusively due to “acts of nature” (potential for gaming is low) and five implies that yield variation is almost exclusively due to “acts of management” (potential for gaming is high). If multiple insurance products are offered, answer for each product.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
very low				very high

60. To the extent that management affects yield loss risk exposure, how difficult is it to monitor the insured’s behavior?

*Extremely Difficult*                      *Difficult*                      *Not too Difficult*

Explain:

61. Quality variation can be caused by unavoidable “acts of nature” or avoidable “acts of management.” In practical parlance, what is the potential for “gaming” the insurance product? Evaluate the potential for gaming the RMA-facilitated insurance product for this crop on a scale from one to five, where one implies that variation in quality is almost exclusively due to “acts of nature” (potential for gaming is low) and five implies that quality variation is almost exclusively due to “acts of management” (potential for gaming is high). If multiple insurance products are offered, answer for each product.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
very low				very high

62. To the extent that management affects quality loss risk exposure, how difficult is it to monitor the insured’s behavior?

Extremely Difficult                      Difficult                      Not too Difficult

Explain:

63. On a scale from one to five, where one is very large and five is very small, assess the extent of moral hazard problems with existing RMA-facilitated insurance products for this crop.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
very large				very small

**Problems Affecting Insurance Participation**

64. Have <i>significant</i> problems occurred (either past or current) with policy provisions on existing RMA-facilitated insurance products for the crop? If multiple insurance products are offered, answer for each product.	Yes	No
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65. If the answer to the previous question is no, go to next question. If yes, for each significant problem:

a. Briefly describe the problem.

b. What has been the impact of the problem (e.g., high loss ratios, reduced demand, etc.)?

c. Have policy provisions since been changed to adequately address the problem?

d. If policy provisions have not been changed, what changes in policy provisions do you think would increase insurance demand for this crop?

66. In this region, do reinsured companies have sufficient incentives to aggressively market existing RMA-facilitated insurance products for the crop?  If yes, go to next question. If no, explain.	Yes	No
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67. In this region, do agents have sufficient incentives to aggressively market existing RMA-facilitated insurance products for the crop?  If yes, go to next question. If no, explain.	Yes	No
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68. List any perils that concern growers of this crop but are not covered by the existing RMA-facilitated insurance products (e.g., business interruption due to unavailability of irrigation water, disease quarantines, etc.). For each peril assess the extent of growers' concerns about this peril on a scale from one to five where one is minor concern and five is major concern.

<i>List all:</i>	<i>1</i> minor concern	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i> major concern

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69. Briefly describe the potential for insuring these currently uninsured perils? In answering this, consider the following questions:

Can hidden action/moral hazard and classification/adverse selection problems be avoided?

Can clearly stated policy provisions be developed and accurate premium rates established?

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70. On a scale from one to five, where one is very high and five is very low, assess the likelihood that problems affecting participation can be adequately addressed by product or policy modifications.

<i>1</i> very low	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i> very high
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