

**IMPROVING THE EFFECTIVENESS AND EFFICIENCY OF THE  
ENVIRONMENTAL QUALITY INCENTIVES PROGRAM**

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## **ABSTRACT**

This study investigates the function of the Environmental Quality Incentives Program (EQIP), the nation's largest working land conservation program. Aspects of EQIP's policies and administration reduce the environmental conservation potential of EQIP given the resources allocated to the program.

This study uses historical data, scholarly articles, personal interviews, and qualitative analysis to reveal weaknesses in EQIP's conservation policies. An assessment of the current policies of EQIP under the 2002 Farm Bill compared to those under the 1996 Farm Bill provide a basis for comparison in effectiveness of various program practices.

In conclusion, this report finds that re-instating certain policies of the 1996 Farm Bill, focusing program resources on larger operations, and creating a more streamlined permitting process will increase the environmental impact of EQIP given its fiscal allocations.

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## CHAPTER 1

### INTRODUCTION

Environmental conservation has become a household term in the United States over the past three and a half decades. Lawmakers of the late 1960s and early 1970s, in response to growing public awareness and concern, drafted watershed legislation regarding the degradation of the land, water, and air quality in America. Legislation such as the Clean Air Act and Clean Water Act reflected the public's increased environmental consciousness and embodied its desire to restrict environmentally harmful practices. Since these landmark bills, conservation legislation has become a fundamental part of conducting business and everyday life in the United States.

Though no price tag can accurately measure the importance of a clean and healthy stream or unpolluted air, America's lawmakers must balance the need for conservation programs with the government's ability to finance them. Even when it comes to the conservation of America's waterways and greenbelts, efficient government expenditure is a priority.

The Environmental Quality Incentives Program (EQIP), established by the Federal Agriculture Improvement and Reform (FAIR) Act of 1996 (also referred to as the 1996 Farm Bill), combined four former cost-share programs to provide America's farmers with financial, technical, and educational assistance to encourage and facilitate environmentally sustainable agricultural practices. EQIP, a voluntary cost-share program, has seen its funding appropriations increase five-fold in its nine-year existence. Funding grew from a \$200 million expenditure in 1997, to an over \$1 billion projected expenditure in 2006 (Becker and Zinn). EQIP is second in federal expenditure only to the

Conservation Reserve Program (CRP). With such an immense budget, it is important to assess if EQIP's benefits to the environment and farmers merits the increased fiscal strain on the federal budget.

The policies of EQIP under the Farm Security and Rural Investment (FSRI) Act of 2002 (also referred to as the 2002 Farm Bill) saw significant changes from those under its predecessor, the FAIR Act of 1996. EQIP will presumably be altered once again under the new farm bill that will be enacted in 2008. The potential policy changes impose a direct effect on the program's administrators, participants, and the environment. The following brief background on EQIP will provide the reader with a better understanding of the program and its significance to environmental conservation.

### *Establishment of EQIP*

EQIP replaces four cost-sharing conservation programs: the Agricultural Conservation Program, Great Plains Conservation Program, Water Quality Incentives Program, and Colorado River Basin Salinity Control Program. The combined funding for these programs averaged just over \$200 million annually in the early 1990s. By fiscal year 1996, as the result of pressure to reduce government expenditure by a fiscally conservative Republican majority in the House of Representatives, funding for these programs dwindled to about \$70 million collectively. In addition, conservation programs failed to elicit the enthusiasm and voluntary enrollment of potential participants. These conservation plans were seen as "excessive and intrusive on farmer activities and decisions" (Zinn). During the mid 1990s, as the future of conservation programs was debated, congressional leadership shifted from the more environmentally-conscious Democrats to Republicans who favored private property rights. This shift facilitated

the establishment of EQIP; a program that placed a greater emphasis on property rights protection than the previous four conservation programs.

### ***Priorities of EQIP***

The primary objective of EQIP is to encourage environmentally sound agricultural practices through financial, technical, and educational assistance. Program funds are prioritized according to the nation's most urgent natural resource concerns. These national priorities are: reduction of non-point source pollution in water; reduction of emission pollutants in violation of the National Ambient Air Quality Standards; reduction of soil erosion and sedimentation; and promotion of species habitat conservation.

This study is concerned with the efficient and effective function of EQIP. Efficient is defined by the Natural Resource Conservation Service (NRCS) as “the least-cost practices or system that achieves the stated conservation objectives.” Effective is defined as the achievement of conservation objectives to minimize negative impacts to health, human safety, and the environment (Natural Resources Conservation Service).

### ***EQIP's Administration***

EQIP is administered by the NRCS at the federal, state, and local levels. The federal NRCS offices determine how funds will be distributed amongst the states. State offices approve applicants for participation in EQIP and determine statewide conservation objectives. Local NRCS offices provide technical assistance by working with program participants individually to establish and carry out conservation plans. In addition to the NRCS, third party technical service providers assist administrators and participants in the various stages of EQIP

contracting. In California, local Resource Conservation Districts have played a growing role in technical assistance issues. Non-profit organizations such as Sustainable Conservation also work with NRCS.

### ***EQIP Changes from 1996 to 2002***

The policies of EQIP under the 1996 Farm Bill placed emphasis on maximizing environmental impact for every program dollar spent. As funding for EQIP increased— \$200 million annually for 1997-2001, \$400 million in 2002, \$700 million in 2003 and \$1 billion in every fiscal year since— an emphasis on equitable distribution of program funds rather than efficient expenditure is seen in the removal of the buy-down process, a cap on the cost-share rate of large projects, and the removal of the priority area evaluation process. These policy modifications to EQIP, coupled with a nearly five-fold increase in program funding, are detrimental to maximizing environmental conservation financed with EQIP cost-share funding, see figure 1.

Figure 1. Comparison Between the 1996 EQIP Program and the 2002 EQIP Program

<b>1996 Rules</b>	<b>2002 Changes</b>	<b>Effects</b>
<b>Program Funding</b> \$200 million per year	\$6.16 Billion from Fiscal Year 2002 through 2007	- \$3.7 B financial assistance (FA) - \$1.3 technical assistance (TA)
<b>Cost-share Practice Limitation</b> none	A total contract cost exceeding \$100,000 will be cost-shared at no more than 50%	- Allow for more contracts - Funding more distributed
<b>Buy-down Process</b> Application ranking system allowing applicant to offer or accept less than the maximum program payments allowed. Applicant may improve index by providing additional environmental benefits without increasing contract costs or accepting a rate less than the established cost-share rate	Eliminated	- Removes bias against limited resource farmers and small producers who cannot afford lesser cost-share. - Decreases benefits for each dollar spent. - If buy-down provision still in place an additional 141 million acres of land could be treated.
<b>Application Evaluation</b> Rank all applicants by the environmental benefits per dollar expended through a comparison of the benefits the contract will produce and the costs to the program (special evaluation).	All applications evaluated using an uniform criteria (homogenous evaluation).	- Decrease in overall net benefits.
<b>Maximum Payment Limitation</b> The amount of cost-share and incentive payments may not exceed \$10,000 per year or \$50,000 per person per contract	The amount of cost-share and incentive payments may not exceed \$450,000 aggregately during the fiscal year 2002-2007.	- Increases likelihood of participation my large producers - More effective use of NRCS technical and administrative assistance due to a lower fixed costs of TA per contract.

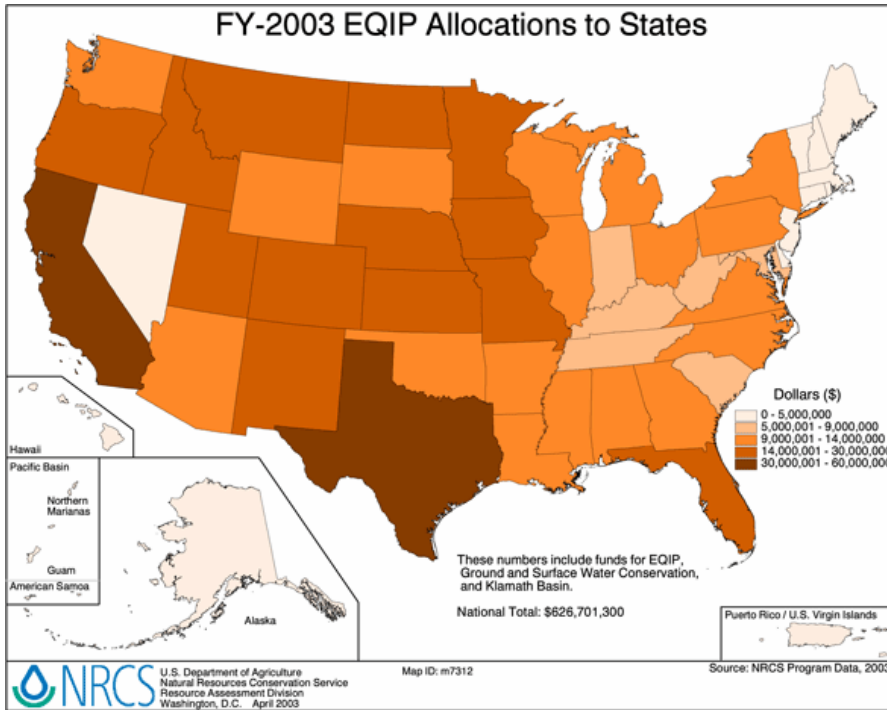
Source: (Atwood, et al.)

### ***EQIP in California***

California accounts for approximately half of the gross national output of fruits and vegetables, tree nuts, dried fruits, and nursery crops. These agricultural products constitute at least half of U.S. gross agriculture receipts, contribute nearly \$30 billion to the U.S. economy, and provide 60 percent of America's daily nutritional requirements. California, which is also the nation's largest dairy producing state (Economic Research Service), has some of the nation's worst air pollution and suffers from non-point source pollution of its waterways. California was

awarded \$83,599,663 by the NRCS in EQIP funding for 2006 to address its natural resource concerns. Texas was first, receiving \$100,399,798, see figure 2. This study analyzes the practices of EQIP throughout the nation but focuses on California to illustrate the regulatory process associated with enacting an EQIP contract.

Figure 2.



Source: Natural Resources Conservation Service

### **Problem Statement**

Changes in EQIP's application evaluation process under the FSRI Act of 2002, the program's failure to focus program resources in larger operations, and restrictive permitting practices are hindrances to EQIP's conservation efficiency.

### **Hypothesis**

EQIP's resources are not utilized to their full conservation potential. Given the funds allocated to EQIP, there exist policy alternatives to increase the program's administrative

efficiency and resource conservation effectiveness.

### ***Objectives***

1. To assess the current policies of EQIP compared to those under the 1996 Farm Bill.
2. To provide policy alternatives to further the efficiency of the application and administration of EQIP by the NRCS.

### ***Justification***

The NRCS, which employs 11,000 men and women across the United States, directs about half of its \$3.3 billion annual budget to the administration of EQIP (Canada, Zinn). California alone received over \$83 million for the fiscal year 2006 in EQIP funds. This study will benefit the thousands of annual applicants of EQIP who seek federal support for adopting environmentally sound agricultural practices. As of October 2004, EQIP had established 117,625 contracts and enrolled 51.5 million acres of land in the United States (equivalent to half the land area of California). America's farmers will receive federal subsidization to adopt environmentally sustainable practices on their operations, which otherwise would be too costly. Furthermore, all Americans will benefit from the conservation of the nation's precious and finite natural resources. This study will examine four policies that, with some adjustments, have the greatest potential for increasing the efficient and effective conservation of natural resources through EQIP.

## CHAPTER 2

### LITERATURE REVIEW

#### *Status Quo of EQIP*

As the priorities of conservation policy were reevaluated in the years leading up to the establishment of EQIP, the need for such a program became increasingly apparent. Fiscal conservatism had all but eliminated resource conservation cost sharing programs and those that were established lacked the enthusiasm of participants. These factors led to policy intervention instigated by environmental and conversationalist interests, resulting in the establishment of EQIP (Canada and Zinn).

The policy changes of EQIP from the 1996 Farm Bill to the 2002 Farm Bill illustrated the struggle of the program's inherent objective. Should EQIP focus on obtaining the greatest environmental benefit for each program dollar expended? Or should EQIP distribute its funds amongst producers with the hope of keeping as many producers profitable while utilizing environmentally sustainable agricultural practices? EQIP is faced with a trade-off between program efficiency and equitable distribution of funding.

It is difficult to place a monetary value on the concerns of society, ethical obligations, and long-term benefits of protecting the environment's scarce natural resources. Unfortunately, there is fierce competition for federal funds between a multitude of interests and concerns, and difficult policy decisions must be made. This study includes an analysis of EQIP policies to illustrate where EQIP funds are best spent and how they can best achieve the program's original objective: maximizing environmental conservation.

The majority of studies reviewed in this analysis of EQIP focus in particular conservation areas or specific policies concerning their effect on the environment, and their

monetary costs. In 2008, a new farm bill will build upon the policies of its predecessors and establish a new set of determinants for EQIP's function. It is necessary to review several aspects of this program, their regulatory dependence upon one another and performance aggregately in EQIP.

### ***Removal of the "Buy-Down" Procedure***

In the 2002 Farm Bill, the "buy-down" procedure of the application evaluation process for potential EQIP contracts was removed. This procedure permitted potential program participants to bid against competing applicants for conservation contracts. The NRCS definition of program efficiency (least-cost practice or system that achieves the stated conservation objective) was directly enforced by this element of the application process. This facet of the 1996 program was omitted from the 2002 program due to the confusing nature of the policy and its discrimination against limited resource producers and smaller producers (Natural Resources Conservation Service). These potential participants were placed at a competitive disadvantage to acquiring contracts because larger farmers applying for similar contracts were able to contribute a greater amount of their own resources.

Under the 1996 farm bill, in order for a program applicant to win an EQIP contract, he or she would have to under-bid the other applicants of the conservation objective. EQIP is a cost-share program that enlists participants to complete conservation objectives, many times, with the financial assistance of EQIP funding. The conservation practice costs would be subsidized at a predetermined cost-share percentage depending on the conservation practice enacted and the size of the contract, see figure 3. This cost-share mechanism required investment on the part of the interested applicant. The buy-down procedure awarded the

applicant who proposed the greatest investment of their own resources to accomplish the conservation objective.

Figure 3. Conservation Practices with Associated Cost-Share Rates

NRCS Practice Code Number	Approved Practice Name	Unit Type*	Average Unit Cost*	Cost Type *	Max. Cost Share Rate**	Not To Exceed Limit***
468	Lined Waterway or Outlet	FT	\$100	AM	50	50.00
634	Manure Transfer	NO	\$50,000	AM	50	25000.00
590	Nutrient management	AC	\$32	FR	100	32.00
516	Pipeline	FT	\$15	AM	50	7.50
512	Pasture and Hay Planting	AC	\$500	AM	50	250.00
521	Pond Sealing or Lining	NO	\$100,000	AM	50	50000.00
528	Prescribed Grazing	AC	\$35	FR	100	35.00
533	Pumping Plant	NO	\$10,000	AM	50	5000.00
550	Range Planting	AC	\$1,000	AM	50	500.00
391	Riparian Forest Buffer	FT	\$2,000	AM	50	1000.00
558	Roof Runoff Structure	NO	\$10,000	AM	50	5000.00
570	Runoff Management System	AC	\$10,000	AM	50	5000.00
350	Sediment Basin	NO	\$10,000	AM	50	5000.00
632	Solid/Liquid Waste Separation Facility	NO	\$100,000	AM	50	50000.00
578	Stream Crossing	NO	\$10,000	AM	50	5000.00
580	Streambank and Shoreline Protection	FT	\$125	AM	50	62.50
587	Structure for Water Control	NO	\$10,000	AM	50	5000.00
606	SubSurface Drain	FT	\$10	AM	50	5.00
607	Surface Drainage, Field Ditch	FT	\$1.25	AM	50	0.63
608	Surface Drainage, Main or Lateral	FT	\$5	AM	50	2.50
612	Tree/Shrub Establishment	AC	\$1,000	AM	50	500.00
620	Underground Outlet	FT	\$30	AM	50	15.00
472	Use Exclusion	AC	\$15	AM	50	7.50
313	Waste Storage Facility	NO	\$150,000	AM	50	75000.00
629	Waste Treatment	NO	\$5,000	AM	50	2500.00
359	Waste Treatment Lagoon	NO	\$50,000	AM	50	25000.00
633	Waste Utilization	AC	\$100	AM	50	50.00
614	Watering Facility	NO	\$10,000	AM	50	5000.00
638	Water and Sediment Control Basin	NO	\$15,000	AM	50	7500.00
351	Well Decommission	NO	\$10,000	AM	50	5000.00
380	WindBreak/Shelterbelt Establishment	FT	\$10	AM	50	5.00
650	WindBreak/Shelterbelt Renovation	FT	\$10	AM	50	5.00
910	TSP-Technical Services-Conservation Planning	NO	Reg Website	FR		Calculated
911	TSP-Technical Services-Design Services	NO	Reg Website	FR		Calculated
912	TSP-Technical Services-Installation Oversight	NO	Reg Website	FR		Calculated
913	TSP-Technical Services-Checkout Certification	NO	Reg Website	FR		Calculated

\* Legend: Unit Type: AC=Acre, LF=Linear Feet, CY=Cubic Yard, GA=Gallon, EA=Each, MI=Mile, Hour=Hours; Cost Type: FR=Flat Rate, AM=Actual Cost-Not to Exceed a Specified Maximum; AC=Average Unit Cost: Data derived from NRCS offices and various program sources. Beginning with FY06, Designated Conservationists have the option to use a new cost type of "Average Cost" or "AM" which is strongly tied to documented practice installation costs and does not require submission of receipts/invoices to justify payment.

Source: Natural Resources Conservation Service

### ***Adoption of Homogenous Evaluation***

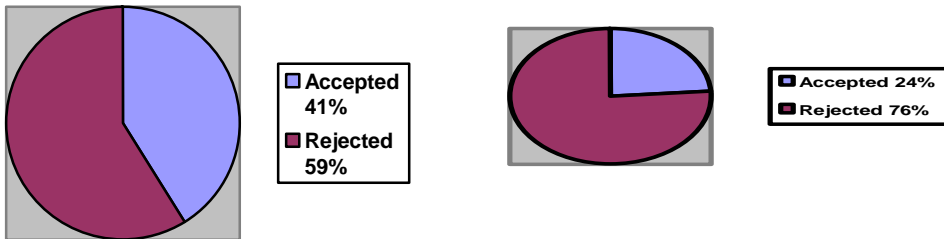
EQIP, under the 1996 farm bill, targeted program resources at areas with the “most pressing natural resource concern” (Natural Resources Conservation Service). In 2002, the targeting of EQIP funds to priority areas was eliminated. The evaluation of EQIP applicants would become a homogenous process scoring all applicants and resource concerns on the same scale. This policy adjustment has led to “watered down” potential environmental benefits (Natural Resources Conservation Service). The use of priority areas to determine funding allocations, known as spatial evaluation, created concentrated effects in special emphasis areas. Spatial evaluation required that 65% of total funds available be focused on areas designated as priority areas by local work groups. These applicants received a higher rate of acceptance than those outside the priority areas. Nearly 41% of applicants residing within a priority area successfully applied for an EQIP contract, compared to 24% award rate to those outside of the designated areas, see figure 4.

The criteria in which the amount of federal funding is allocated to each state is calculated in an objective manner. Funding is allocated to by the Chief of the NRCS, who authorizes how much funding goes to each state based on national priorities and objectives determined on a state-by-state basis. The criteria used to determine funding allocations consists of the measure of 31 different characteristics of each state (Norman). The characteristics are broken up into base factors (e.g. acres of irrigated cropland, acres of specialty crops, etc.) and resource factors (miles of impaired rivers, acres of pastureland needing treatment, etc.), see figure 5.

Figure 4. Priority Area Application Acceptation Rates

Priority Area Applications

Non-priority Area Applications



Source: NRCS, USDA

Figure 5.

### **EQIP FY 2006 Allocation Methodology, NRCS**

The base factors (*what percentage*) include:

1. Acres of non-irrigated cropland (1997 NRI)
2. Acres of irrigated cropland (1997 NRI)
3. Acres of Federal grazing lands (1992 NRI)
4. Acres of non-Federal grazing lands (1997 NRI)
5. Acres of forestlands (1997 NRJ)
6. Acres of specially crops (1997 NR1)
7. Acres of wetlands and at-risk species habitat (1997 NRJ)
8. Acres of water bodies (1997 NRJ)
9. Livestock animal units (1992 NRI)
10. Animal waster generation (1992 NRI)
11. Waste management capital cost (1992 NRI)
12. Acres American Indian Tribal Lands (1997 BIA)
13. Number of Limited Resource Producers (1997 Ag Census)
14. Grazing land lost to conversion (1997 NRI)
15. Air Quality non-attainment areas (EPA)

These resource factors (*what percentage*) include:

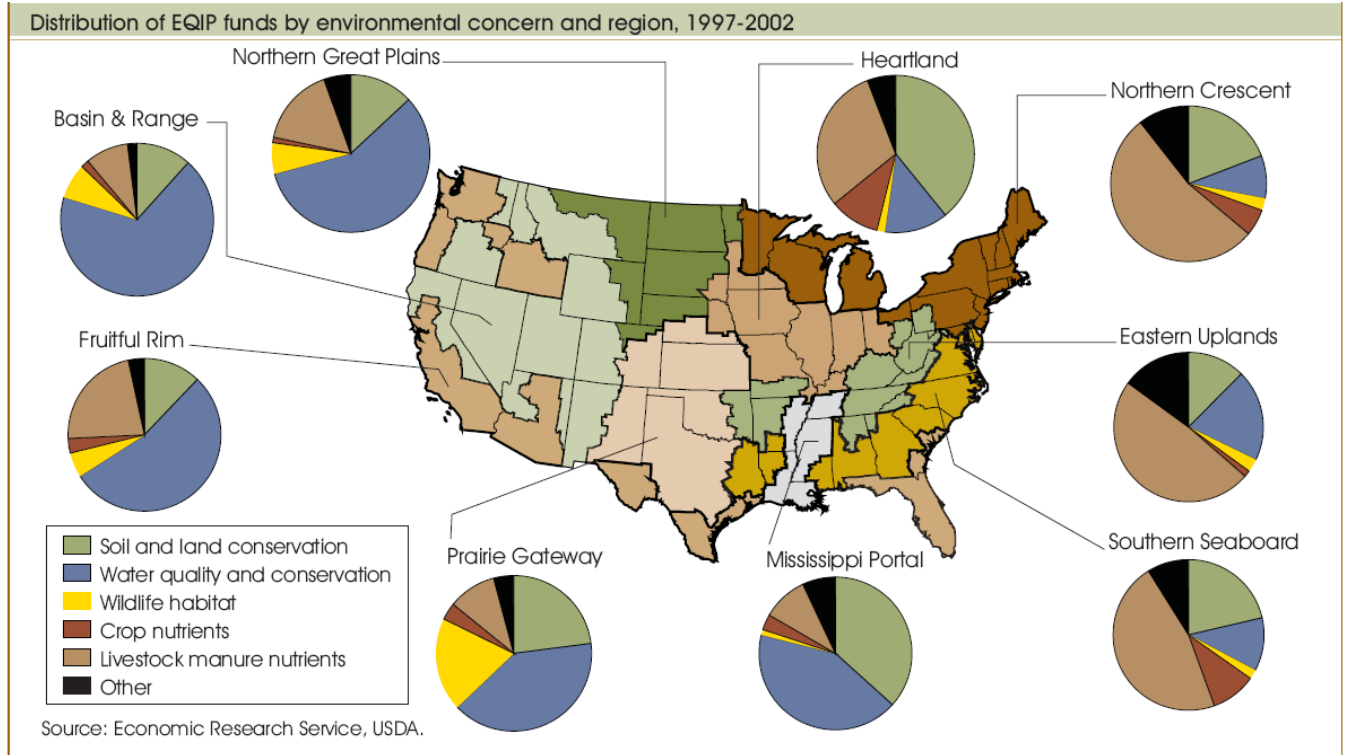
1. Acres of pastureland needing treatment (1992 NRJ)
2. Acres of cropland eroding above T (1992 NRI)
3. Acres of Fair and Poor Rangeland (1992 NRT)
4. Acres of Forestlands, eroding above T (1992 NRI)
5. Acres of cropland and pastureland soils affected by saline and/or sodic conditions (1997 NRI)
6. Miles of impaired rivers and streams (EPA)
7. Potential for pesticide and nitrogen leaching (1 997 NRCS Report)
8. Potential for pesticide and nitrogen runoff (1997 NRCS Report)
9. Ratio of livestock animal units to cropland (1997 NRCS Report & NRI)
10. Number of CAFO/AFO (1997 Ag Census)
11. Ratio of commercial fertilizers to cropland (1995 American Plant Food Control Officials Report)
12. Wind erosion above T (1997 NRI)
13. Phosphorous runoff potential (1997 NRCS Report)
14. Riparian areas (1997 NRCS Report)
15. Carbon sequestration (1992 & 1997 NRCS Reports)
16. Coastal zone (1992 NOAA Report)

### *Targeting Large Producers*

In 2002, the EQIP payment cap for a single program participant through the duration of the 2002 Farm Bill was increased to \$450,000, and a payment cap of a maximum of 50% cost-share rate for projects over \$100,000 was instated. EQIP contracts for less than \$100,000 may qualify for up to 75% cost-share financial assistance. Limited resource farmers may qualify for up to 90% cost-share.

The concentration of animal units (AU) on large livestock operations has increased drastically over recent years resulting in environmental externalities necessitating conservation action. From 1982 to 1997, the number of confined hog operations in the United States decreased by 64%, from 175,284 farms to 63,723, while the number of AU increased by 30%, from 6.3 million AU to 8.2 million (Ribaud). The manure spreading practices on large, concentrated populations of livestock has resulted in severe non-point source pollution of America's waterways, a significant resource concern addressed by EQIP, see figure 6. Large Confined Animal Feeding Operations (CAFO), defined as operations containing at least 1,000 AU, typically spread manure nitrogen at 7.4 times the agronomic rate of absorption by plant life. Small operations, defined as operation with less than 300 AU, do not apply manure nitrogen at which exceeds what crops may naturally absorb (Key).

Figure 6.



Source: ERS, USDA

### ***Permit Streamlining***

Personal interviews with officials at NRCS and California Department of Food and Agriculture (CDFA) cited the permitting process as the most significant deterrent to program participation. Interviews with District Conservationists John Bechtold, in the Santa Maria, California, local NRCS office, and Margi Lindquist, in the Templeton, California, local NRCS office, revealed the frustration of administration and participants concerning the permitting process. Contracts overlap the jurisdiction of numerous federal, state, local, and regional agencies requiring separate and independent regulatory review for each agency, see figure 7. Permit fee costs may reach thousands of dollars and responses may be delayed for over a year. The result is reduced interest by potential participants, and a decreased enthusiasm by those

who endure the process (Bechtold). An EQIP participant from California, who designed a plan to protect an eroding stream bank, must receive permits from five to seven separate federal, state, and local agencies, pay hundreds if not thousands of dollars in permitting fees, and potentially wait over a year for all the necessary approvals (Lindquist). The Director for Agriculture and Environmental Stewardship for the CDFA, Steve Schaffer, explained Sustainable Conservation, a non-profit organization serving business, agriculture, and government, had developed a permit streamlining program to expedite the permitting process and produce a “one-stop shopping” style process for program participants.

Sustainable Conservation has applied the Partners in Restoration (PIR) permit coordination program to a handful of watersheds areas in the Northern and Central Coast regions of California. Under PIR, an applicant may receive technical or financial assistance through EQIP without seeking individual permits. Federal, state, local and regional agencies have cooperated successfully for restoration projects in the Elkhorn Slough area of Monterey County, and Morro Bay areas of California. The PIR has also required the cooperation between Sustainable Conservation, NRCS, and local Resource Conservation Districts (RCDs). The participating agencies must all agree on commonly used conservation practices called best management practices (BMPs), which must be approved in advance (Sustainable Conserve).

Agency	Gov. Level	Main Jurisdiction
<b><u>Army Corps of Engineers</u></b>	Federal	Construction activities that occur in the Nation’s waters, including wetlands. Corps permits are also necessary for any work, including construction and dredging, in the Nation’s navigable waters.
<b><u>NOAA National Marine Fisheries Service</u></b>	Federal	Management, conservation, and protection of living marine resources within the United States Exclusive Economic Zone, specifically under the protected species program.
<b><u>US Fish and Wildlife</u></b>	Federal	Conserve, protect, and enhance fish, wildlife and plants in accordance with laws and treaties, particularly pertaining to Endangered Species.
<b><u>CA Dept. Fish and Game</u></b>	State	Manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend. Requires a Stream Alteration Agreement (SAA) for projects that will divert or obstruct the natural flow of water, change the bed, channel or bank of any stream, or use any material from a streambed.
<b><u>CA Regional Water Quality Control Board</u></b>	State	Nine Regional Water Quality Control Boards. Regional Boards engage in a number of water quality functions to protect California's water resources. The most common of which are the Basin Plans which are water quality control plans.
<b><u>Grading Ordinance</u></b>	Local	Provide public information, efficient grading plan checks, inspection and code enforcement of grading construction projects.
<b><u>City/ County Environmental Health Department</u></b>	Local	This agency may be involved if work on the stream, or discharge into the stream that may potentially pose a public health hazard.
<b><u>Local Irrigation, Water or Flood Control District</u></b>	Local	Empowered to protect water resources within their jurisdiction which may require a permit for certain projects.
<b><u>City/ County Planning Department</u></b>	Local	Consultation with a local planner early in planning your project and before you submit an application may reveal local ordinances pertaining to creeks and wetlands, and depending on the nature, may require other permits, exceptions, or approvals.
<b><u>California Reclamation Board</u></b>	Regional	Regulates flooding along the Sacramento and San Joaquin Rivers and tributaries. Jurisdiction includes the entire Central Valley, including all tributaries and distributaries of the Sacramento and San Joaquin Rivers and Tulare and Buena Vista basins.
<b><u>CA Coastal Commission</u></b>	Regional	Protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable use. The coastal zone extends from the State’s three-mile seaward limit to an average of approximately 1,000 yards inland.

## CHAPTER 3

### METHODOLOGY

#### *Procedures for Data Collection*

The research necessary to support the hypothesis will be based on primarily on secondary data. Historical data from the NRCS and Congressional Budget Office is used to illustrate past trends in program expenditures and fiscal allotments. United States Department of Agriculture (USDA) and U.S. Census data illustrate state characteristics affecting EQIP funding and resource concerns. The California Association of Resource Conservation Districts provides data on the inter-agency administrative jurisdiction in California. The Congressional Research Service (CRS) provides information on policy changes resulting from changing farm bills. The CRS also provides useful information about the legislative background of how EQIP was formed and what influences determined its current status. Newspaper articles are used to depict the effect environmental policy has on the general public. Scholarly articles from various universities across the nation provide statistical, fiscal and policy data and are available at online databases such as the AgEcon Search. The Economic Research Service (ERS), an agency of the USDA, provides publications on a large number of agricultural issues. Many ERS online research reports provide information which is easily obtained at its webpage.

Personal interviews from NRCS and CDFA officials are used to highlight faults of the program's current function. First-hand testimony from policy, and administrative specialists selected for their involvement with EQIP's administration, policies and knowledge of conservation contracts will be collected by means of personal interviews. Interviews are conducted with the NRCS Legislative Specialist Gayle Norman, NRCS District

Conservationists Margy Lindquist and John Bechtold, and CDFA Conservation Specialist Steve Schaffer.

A qualitative policy analysis of the function of EQIP and its effects as an environmental conservation policy will be based on the preceding data sources in conjunction with the policy analysis framework consisting of the four variables: situational, structure, conduct and performance (Matthews, et al.). Analyzing EQIP using these four variables will illustrate the strengths and weaknesses of EQIP's policies. The analysis will also include an informal cost-benefit analysis. This analysis will capture valuable information not recorded by the fiscal auditing, legislative allocations to government census, and illustrate how EQIP funds will best be utilized and what policy adjustments should be made in the 2007 Farm Bill for its most efficient and effective use.

### ***Procedures for Data Analysis***

Data, concerning the previous eight years of EQIP's implementation, may be presented in graphical and chart form. Graphical presentation of program application rates, federal EQIP funding, and allocation of funds by state will facilitate the reader's understanding of the fiscal trends of the program. Simple charts juxtaposing policy changes from 1996 to 2002, and agency jurisdictions will reveal trends in EQIP's application.

Governmental investigation into the legislative history and interests involved in the establishment of EQIP is revealed by a 1996 CRS report by Becker and Zinn. By studying the historical trends of the program, the future trends may be speculated. Factoring real administrative and policy experience with EQIP and prior trends of the program provides a clearer vision of

EQIP's future. A cumbersome permitting process calls for reform in streamlining the process amongst various local, state and federal government agencies (Bechtold).

Data analysis will take into account a plethora of data ranging from numerical data collected by governmental auditing agencies to analytical investigations of university publications in order to best reveal the greatest hindrances in increasing the efficiency and effectiveness of EQIP. Numerical data may be presented graphically, but the vast majority of data analysis will take written form. By exposing any inefficiencies in NRCS's administration of EQIP or the application of EQIP assistance, financial or technical, the policy weaknesses may be isolated. The analysis will lead to policy suggestions which will be submitted to the administrative agency of EQIP, the NRCS, and those in a position to affect the function of EQIP, namely the state and federal legislatures.

### **Assumptions**

This study assumes that funding for EQIP will continue beyond fiscal year 2007, when conservation program appropriations must be renewed by Congress. EQIP has been funded for the previous eight fiscal years. Barring a dramatic change in the political climate fostering an encouragement for environmental and resource conservation, the funding for EQIP will continue and the problems addressed in this study will still be deemed pertinent.

## CHAPTER 4

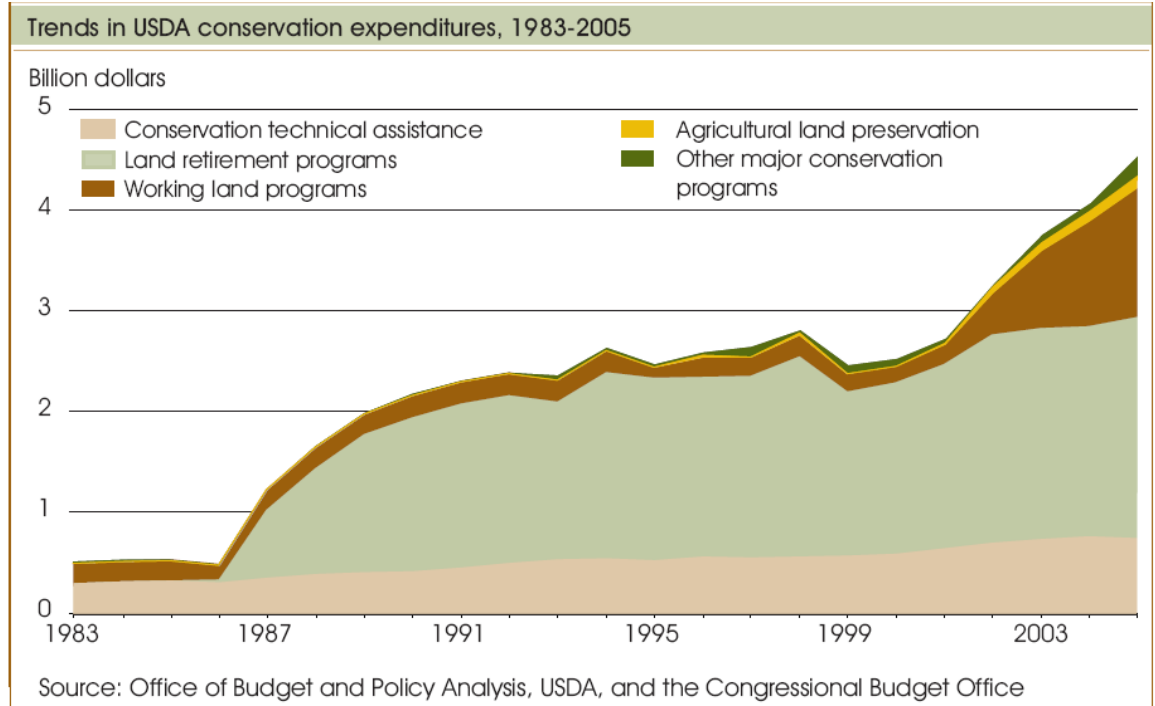
### DEVELOPMENT OF THE STUDY

The policies and administration of EQIP will facilitate a \$1 billion investment by the taxpayers of America in 2006 in on-farm environmental conservation practices. Nearly two-thirds of the land in the United States is farmland, rangeland, or private forestland, therefore the importance of such an agri-environmental policy as EQIP is integral to protecting America's finite natural resources.

As seen in Figure 8, policies to integrate environmental conservation and the agriculture sector of the economy are not new. Several types of conservation plans have been enacted by Congress and administered by the USDA for over twenty years. The most significant recent transformation in conservation policy is the drastic increase in federal expenditure for the working land program: EQIP. Though the land retirement program, CRP, is still the most highly funded federal conservation program, EQIP is the fastest growing.

The popularity of EQIP, and working land programs like it (Conservation Security Program, Wildlife Habitat Incentives Program), may be explained by the diverse and vocal interests that support it. Conservationists, environmentalists, politicians, and farmers have brought these programs into existence and requested increased funding over the years. These interests have found common ground in EQIP's conservation-oriented policies which moves towards sustainable farming practices on working lands.

Figure 8.



### ***Removal of the "Buy-Down" Procedure***

The removal of the “buy-down” procedures was a movement towards a more equitable application process for EQIP; however, the removal of this process decreases the amount of conservation which may be enlisted with the program’s limited resources. The goal of EQIP is not to redistribute income to farmers. The goal of EQIP is to “utilize the program’s resources to provide a conservation program for farmers and ranchers that promote agricultural production and environmental quality and assist eligible participants to install or implement structural and management practices on eligible agricultural land” (Natural Resources Conservation Service). With a scarce amount of resources available for achieving the program’s goal, acquiring the greatest environmental benefit for least cost is vital.

The negative effect the removal of the buy-down procedure of the application process may be seen as two-fold. First, the cost of individual contracts will be higher than those that used the buy-down process. This translates to greater program expenditure for the same amount of environmental conservation. With an increase in the program cost per treated environmental concern, fewer environmentally sensitive natural resource concerns may be addressed per dollar of EQIP funds. If a buy-down provision was in place for the duration of the 2002 Farm Bill, an additional 141 million acres of land could be treated (Atwood, et al.). Second, a reduced investment on the part program participants increases the risk of the default of a contract, or the abandonment of its conservation objective.

The buy-down provision provides more environmental gain for each dollar of program expenditure. Bidding for contracts improves the environmental performance (measured with the AEI<sup>1</sup>) of EQIP by more than 15% under current program funding and production patterns (Cattaneo, et al.). The monetary cost benefit analysis measure of the lost efficiency of EQIP with the removal of bidding reveals a \$6 cost of achieving one AEI point benefit with bidding, and a \$8 cost to accomplish the same without the buy-down procedure (Cattaneo, et al.).

This investment on the part of the participant hedges the risk of him or her later defaulting, breaking or failing to complete the plan. As seen with a long-term loan made by any financial institution, a down-payment or investment on the part of the borrower is seen as a means to share the risk of the investment and reduce the chance for default. This rationale carries over to EQIP's investment of a program participant to carry out his or her contract and

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<sup>1</sup> The Aggregate Environmental Index is a measure utilized by the USDA. This means of quantifying environmental performance factors the following nine resource concerns: nitrogen discharged to surface waters, nitrogen leached into ground water, phosphorus discharged into surface waters, pesticides discharged into surface waters, pesticides leached into ground water, sediment eroded into surface waters, soil eroded via the wind into the atmosphere, carbon emitted into the atmosphere, and loss in long-term soil productivity.

complete the conservation objective. In a survey taken in 2003 of 1,500 cattle producers in Louisiana, 9% of those who received program funds later broke the contract (Gillespie, et al.). Broken EQIP contracts translate to funding not being used to its full environmental potential. The removal of the buy-down procedure decreases the amount of investment on the part of the program participant and increases the risk of contract default. These results of the policy change are direct hindrances to EQIP's efficiency.

### ***Adoption of Homogenous Evaluation***

The conservation policies of EQIP should reflect the differentiated environmental problems that plague natural resources of the United States. Natural resource concerns are not homogenous across the nation; the policies to address them should not be either. Therefore, priority evaluation application evaluation was essential for the most efficient use of EQIP funds. This process had a twofold benefit to the conservation practices of EQIP. First, areas that most need conservation attention were given precedence for limited EQIP funds. Though higher in previous years (see figure 9), only 30,251 contracts were established from the 204,313 applications for the fiscal year 2003, or 14.8% (Canada and Zinn). Only a fraction of the interested applicants receive funding for their conservation plans, therefore prioritizing funding is essential for achieving a maximized level of environmental benefit for the limited EQIP funding available. EQIP administrators have the advantage of choosing from a large number of potential participants those whose contracts that will have the greatest environmental impact for the funding allocated to them; spatial evaluation capitalizes on this advantage. Second, local influence by the work group made the priority areas very popular to those located within the boundaries of the priority area, furthering the environmental impact.

Currently, EQIP allocates funding to states based on a 31-point criteria. Though the goal of the 31-point criteria is to effectively distribute EQIP funding among the states, without the priority area process, several critical factors are not factored into the allocation decisions. Important influences on environmental degradation, not easily quantified by the 31-point criteria, such as weather patterns and geological formations are neglected. An example of an environmentally sensitive area, the severity of which would not accurately be quantified by the 31-point system, is the exceedingly polluted air of Fresno, California. Fresno, considered the worst place in America for smog and one of the worst for haze, has been dubbed the nation's capital for bad air (Arax). Over 16% of the children in Fresno County have been diagnosed with asthma, the highest rate in California. Approximately 1,300 San Joaquin Valley residents, mostly children and the elderly, die each year from respiratory diseases related directly to the pollution; this is more deaths than the sum of all fatalities resulting from car accidents, murder and AIDS combined. This valley county, the largest producer of raisins in the nation and one of the leading dairy counties as well, needs conservation attention. In 2005, Fresno County only received 3.07% of California's EQIP funding allocation, about 80% of which went towards air quality issues (Natural Resources Conservation Service). In Fresno County the emissions from dairies and feedlots contributing to smog and haze are growing by 5% per year. It is estimated within three years from the article's publication in December 2002, that emissions from dairies and feedlots will become the largest source of smog-forming gases in the region (Arax).

A spatial evaluation process incorporating the input of local work groups would reveal the fact that the area's weather pattern and geological characteristics play a significant role in the accumulation of air pollution in Fresno County; influences the 31-point criteria fail to recognize and therefore compensate in federal funds. The San Joaquin Valley is the longest

valley in the nation. The Sierra Nevada Mountain Range and Coast Range trap an inversion layer of emissions. This layer, along with the high average temperatures in the summer and stagnant fog in the winter, create a multiplier effect for pollution accumulation in the area. This combination of climate and terrain in the Fresno area requires only half the emissions of Los Angeles to create the same amount of smog and haze (Arax).

The importance of reinstating the priority area conservation targeting quotas in the 2007 Farm Bill are essential to making EQIP more effective at environmental conservation. Though in itself, there is negligible fault in the 31-point criteria used to determine state allocations, but without the accompaniment of spatial evaluation, the environmental impact of EQIP is watered down. In order to make the best use of the finite resources of EQIP, they must be focused on the most urgent resource concerns, especially those which directly affect the welfare of the area's inhabitants.

Figure 9.

Applicant Acceptance Rates

<b>Fiscal Year</b>	<b>Total Applications</b>	<b>Contracts (% of Applications)</b>	<b>Backlog Applications</b>
1998	54,816	19,758 (36%)	35,058
1999	51,877	18,847 (36%)	33,030
2000	53,961	16,249 (30%)	37,712
2001	47,461	17,684 (37%)	29,777
2002	90,312	19,817 (22%)	70,495
2003	204,313	30,251 (15%)	174,062

Source: Natural Resources Conservation Service

Targeting Large Producers

Although the increase in the payment cap was a step in the right direction for program efficiency, the cost-share ceiling may continue to deter the adoption of environmentally friendly production practices upon large operations. The 50% cost-share payment cap for large contracts is a policy mechanism to spread the EQIP funds over a wider number of participants. Larger producers are the more prolific contributors to environmental degradation and stand to expend a far greater amount of personal resources in the adoption of conservation contracts; therefore, the degree of environmental benefit and the benefit to the producer is higher for larger operations than smaller ones. Equity concerns limit the cost effectiveness of achieving the greatest environmental benefit for each EQIP dollar spent.

It is necessary to focus EQIP funding on the larger operations, which are the primary contributors to nitrogen seepage into ground water and other water resources which in turn negatively impact America's waterways. "We want to be good neighbors, but it's not that easy...we'd have to redesign our entire dairy to cut down on the dust and gases. You're talking about \$3 million to \$4 million to fix it," according to the manager of Jensen Dairy, a large CAFO in Fresno County (Arax). Limits on the financial assistance available to the most prolific polluters in agriculture for the adoption of more environmentally friendly practices greatly deter conservation where it is needed most. There is no economic gain associated with implementing lower payment ceilings. In fact, EQIP contracts with large operations tend to decrease administrative costs per AU or acre treated. Classic economies of scale rationale indicate such fixed costs as technical assistance and administrative work, when distributed over a larger number of AU or acres treated, are decreased in the per unit costs calculation (Natural Resources Conservation Service). The proportion of program funds spent on fixed costs decreases as contract size increases. Isolating cost of implementation of EQIP contracts, efficiency is lost in the per AU assistance costs in small livestock operations when compared to larger ones (Atwood, et al.), see figure 10.

The 50% cost-share ceiling for large contracts (over \$100,000) limits EQIP efficiency. The progressive cost-share rate structure would be an effective distribution method for a welfare program aimed at supporting ailing producers' income, but EQIP is a conservation program aimed at rectifying the ails of the environment. Though it would seem the largest producers would need the least government subsidization, they are facing the largest monetary barrier to adoption of conservation practices due to the scale of their operations. Increasing the maximum

cost-share rate to 75% for large contracts would remove a barrier to participation for many large producers and therefore more effectively address natural resource concerns.

Figure 10. Reduction in Pounds of Excess Soil Nitrogen per Dollar of EQIP Payments by Farm Size and Region

	<b>Eastern Corn Belts</b>	<b>Western Corn Belts</b>	<b>South and West</b>	<b>U.S.</b>
<b>CAFO (&gt;1000AU)</b>	2.89	2.53	1.12	1.69
<b>Medium-Scale (300-1000 AU)</b>	2.50	1.87	0.91	1.81
<b>Small-Scale (&lt;300 AU)</b>	0	0	0	0.01

Source: Key, Nigel

### ***Permit Streamlining***

The permitting stage of the application process for EQIP participation is complex, cumbersome, and costly. Currently, PIR programs have focused on watershed protection but the benefit of such permit streamlining may be carried over to other conservation practices. Sustainable Conservation is developing a training program to train local RCD and NRCS staff for PIR programs in their local offices to facilitate more a timely permitting process.

The permitting hindrance of EQIP permitting may be addressed by convening the varying agencies, all sharing the goal of natural resource protection under their jurisdiction, under a more direct permitting policy. Agencies function at different hierarchal levels: federal, state, local or regional. They administer regulatory control of different natural resources. The common goal of any of these agencies is to protect the environment under its jurisdiction. The

PIR has utilized this commonality to develop an expedited permit process. This streamlined process is currently only practiced in a handful of California NRCS offices. If funds are allocated to extend the PIR throughout the rest of California and the U.S., administration of EQIP will become much less cumbersome nationwide.

## CHAPTER 5

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In the next Farm Bill, the policies of EQIP will be altered and funding allocations will be determined based on the program's successes and failures. There is a policy discrepancy on the grounds of EQIP's perceived successes and failures. Some of the changes between the 1996 Farm Bill and 2002 Farm Bill reflect program emphasis on equitable distribution of EQIP funding and others on funneling funds to those who may make the greatest environmental impact. In the next farm bill, the goal of EQIP to provide as much environmental conservation as its funding will allow must be reflected in its policies. EQIP must re-instate the buy-down, and spatial evaluation during the application process, as well as target larger operations if EQIP program expenditure is to create a more significant environmental impact. In addition, the permitting timeline for EQIP contracts must be shorter and levy less of the cost and administrative hassle upon applicants. These environmentally beneficial conservation contracts should be encouraged, not forced to endure months and thousands of dollars worth of governmental red tape.

If these four policy and administrative adjustments are made to EQIP, the program will more efficiently address the nation's environmental concerns, address those concerns that need the assistance most urgently, and make participation more accommodating to those enacting conservation contracts.

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