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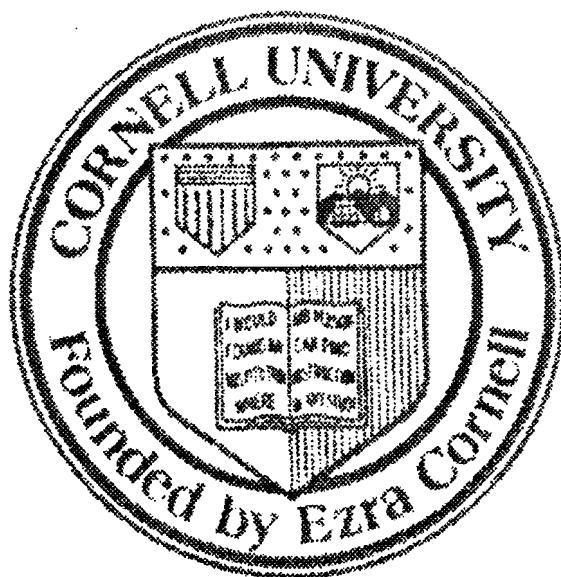
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The Cornell Program on Dairy Markets and Policy

SUMMARY OF ACTIVITIES, 1989 TO 1993

by

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THE CORNELL PROGRAM ON DAIRY MARKETS AND POLICY

Program Faculty and Staff

Cornell has a long history of commitment to dairy marketing and policy research and education, beginning in 1924 with the hiring of Dr. Leland Spencer, the first Land-Grant university economist to devote his career to the study of dairy markets and policy and a pioneer in developing this as a sub-area of agricultural economics. Today there are a number of Cornell faculty and staff who research, teach, and provide applied research and educational programs for the dairy industry, government agencies, legislative bodies and other interested parties, as follows:

Program Staff

Dr. Andrew Novakovic, program director and the E.V. Baker Professor
of Agricultural Economics
Dr. James Pratt, senior research associate
Dr. Mark Stephenson, senior extension associate
Jay Mattison, research specialist
Wendy Barrett, secretary and computer support services
June Ploss, research aide and librarian

Dairy Marketing and Policy Faculty

Dr. Bruce Anderson, associate professor
Dr. Richard Aplin, professor
Dr. Olan Forker, professor
Brian Henahan, extension associate
Dr. Harry Kaiser, associate professor
Dr. John Lenz, research associate

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THE CORNELL PROGRAM ON DAIRY MARKETS AND POLICY

Summary of Activities, 1989 to 1993

Preface

The Cornell Program on Dairy Markets and Policy is a research and extension education program of the College of Agriculture and Life Sciences at Cornell University. The program and its staff are located in and are part of the Department of Agricultural, Resource and Managerial Economics. Although not formally structured as a program until 1988, it builds on a 70-year history of leadership and excellence at Cornell University in the area of dairy marketing.

Change and evolution are found in the history of the dairy industry as much as in any aspect of American society. Nonetheless, the 1980s began a period of unusual transition and turmoil for dairy farmers and processors, a period which shows every sign of continuing through the 1990s. There have been an explosion of new technologies, changes in consumer food preferences and marketing systems, and serious reductions in government support programs. Ironically, the 1990s may also be a period of growing government regulatory programs designed not to provide support but to regulate production and marketing activities for other purposes. To respond to these transitions, the Cornell Program on Dairy Markets and Policy's mission is four-fold. The first mission is to educate current and future leaders on the basic economic principles and characteristics relevant to dairy markets and policy. This includes working with members of industry and government agencies and teaching undergraduate and graduate students. The second mission is to provide and interpret market and policy information. The third mission is to assist and advise members of industry and policy makers as they seek to understand or develop dairy policies or new marketing institutions, mechanisms, and practices. The fourth mission is to advance a broad and integrated approach to the economic issues and challenges confronting the dairy industry. This means interpreting information gleaned from other disciplines, such as food science, animal science, consumer economics, business management, and so on. Whenever appropriate and possible, we encourage working with researchers in other disciplines and in other areas of the country to achieve a broad, inclusive perspective.

In 1989, the Cornell Program on Dairy Markets and Policy collaborated with the Texas A&M Agricultural and Food Policy Center to form a National Institute for Livestock and Dairy Policy (NILDP). The Institute is a focal point for a neutral and objective analyses of the consequences of alternative government policies on the livestock, dairy, and poultry industries and the broader economics of livestock and dairy markets. Based on their respective strengths and emphases, Texas A&M is the lead institution on livestock and poultry sector analysis, and Cornell is the lead institution on dairy sector analysis. The Institute has been supported by a special research grant through the U.S. Department of Agriculture since 1989.

Objectives and Core Projects

Objectives of the Program on Dairy Markets and Policy are to:

1. analyze how dairy markets are affected by dairy legislation, alternative dairy policies, and the implications of changes in trade policy or other exogenous policy factors; and maintain and improve the models used to conduct these analyses. This objective is carried out under

the core project **Dairy Sector Modeling and Analysis**, which is supported through the National Institute for Livestock and Dairy Policy (NILDP), and in the related core project **Dairy Market and Policy Research**, which is supported by other sources.

2. analyze how dairy farms having different resource endowments and performance characteristics respond to changes in policy or other factors. This objective is carried out under the core project **Dairy Farm Modeling and Analysis**, which is supported by NILDP.
3. communicate research results and information to industry members, policy-makers, and analysts and educators so as to improve their understanding of policy issues, the effects of current and possible future federal programs, and the basic economics of dairy markets. This objective is carried out under the core project **Dairy Market and Policy Education**, which is supported by NILDP.
4. maintain and enhance databases containing market data and publications pertaining to dairy marketing and policy and supporting the research and extension activities described above. This objective is carried out under the core project **Dairy Market Database**, which is supported by NILDP.
5. educate New York and regional dairy industry interests about dairy markets and policy and extend relevant research on this subject. This core project is referred to as the **Statewide and Regional Extension Program** and is supported by Cornell Cooperative Extension and other funds.
6. conduct research on the economics of dairy markets and dairy policy, beyond that which is support by NILDP. Much of the work under the overall Program derives from and is sponsored by NILDP; however related work is carried out independently or under other grants. This area is simply referred to as **Dairy Market and Policy Research**.
7. assist in integrating related research and extension programs in the Department of Agricultural Economics and elsewhere in the College of Agriculture and Life Sciences at Cornell. Two specific programs in the Department are considered to be **Affiliated Programs**. Although they are not strictly a part of the dairy program and not limited to dairy subjects, they relate in a large and important way to the dairy program. These two affiliated programs are: 1) Promotion and Demand Analysis and 2) Cooperative Enterprise.

The structure of the Program and its projects are illustrated in Figure 1. The figure distinguishes between projects that are supported through NILDP and those that are not. It also refers to numbered sub-projects, which are described in a later section. Other major activities associated with projects are also identified, including periodical publications, like *Northeast Dairy Marketer* and *Dairy Marketing Notes*, regular conferences and workshops, and so on. The following sub-sections describe each of the core projects. In the next major section, sub-projects are listed chronologically and described. Publications for the period 1990 to 1993 are listed in appendices A through D.

Dairy Sector Modeling and Analysis

Rapid change in the dairy sector and federal dairy policy have been major factors leading to the support for NILDP and the dairy program in particular. The Cornell dairy program devotes substantial resources to the formal and informal analysis of policy proposals and their potential implications

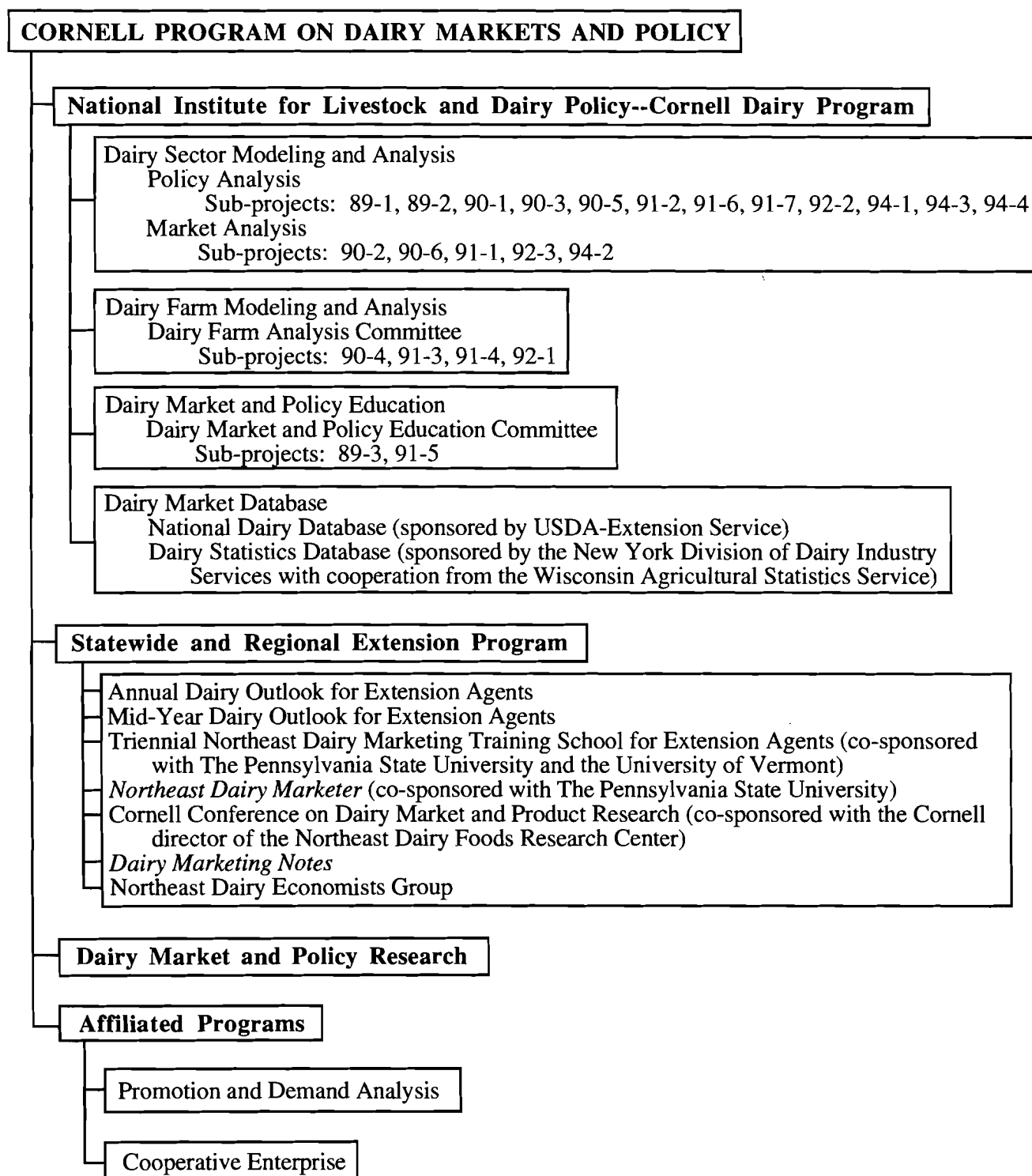


Figure 1. Overview of Cornell Dairy Program Projects and Activities

for dairy markets, ranging from producer to consumer effects. To this end, several models have been developed for policy and/or market analysis purposes. In addition to maintaining and improving the basic models, current and future work stresses the following topics:

1. changes proposed in connection with federal milk marketing orders, including:
 - a. the level of class I differentials across order areas and
 - b. a new basic formula price to replace the M-W price.
2. proposals for agricultural trade liberalization, including:
 - a. a new General Agreement on Trade and Tariffs under the Uruguay Round and
 - b. the North American Free Trade Agreement.
3. alternatives to the current dairy price support program or other relevant policies.

A lengthy list of specific sub-projects established in this area is shown in Figure 1. The description differentiates research that is best described as policy analysis from studies that were not specifically oriented toward the analysis of specific policies or proposals.

Dairy Farm Modeling and Analysis

This NILDP supported project emphasizes understanding the implications of economic and policy changes on dairy farms distinguished by different physical, human, and capital resource endowments, factor prices, geographic locations, etc. Specific sub-projects that are ongoing or planned include:

1. analysis of factors correlated with various measures of financial performance evidenced in the Cornell Farm Business Management Summaries and other farm firm data sets.
2. comparison of dairy farm performance measures and analysis of economic, sociological, and policy factors contributing to farm performance differences between farms in the Northeast and neighboring Canadian provinces.
3. implications of new policies for dairy farms having different resource endowments and performance characteristics.
4. analyses of the potential implications of new environmental regulations and production practices for dairy farm performance and management strategies.

The work under this project is carried out by program staff but is also coordinated through a Farm Analysis Committee. In an effort to stimulate and coordinate similar work at other universities which have access to similar dairy farm records, several researchers were invited to form the committee. This committee meets periodically to discuss progress and make plans toward complementary research, ultimately leading to a coordinated analysis of dairy farms in and across states.

Dairy Market and Policy Education

The purpose of this project has been to pull together and/or create materials that can be used to 1) improve the level of understanding of how dairy markets and policy work and 2) communicate information and findings relative to possible new federal programs. This objective is similar to the purpose of the more traditional Statewide and Regional Extension Program; however the federal

support for this project allows us to develop and implement an extension program having a national audience and multiple university participation. Specific sub-projects under this category have focused on the development of sets of leaflets oriented toward providing basic instruction on dairy markets, pricing, and policy. Future work may lead to the development of a computer based, information retrieval system, or expert system. Depending on the level of sophistication in the basic system and the range of information it contained, such a system might require support beyond the current scope of this program. However, a system such as this could build off of the written materials proposed for the first phase of the project. Additionally, such a system could be incorporated into one or more aspects of the database project discussed below.

The work under this project is carried out by the Dairy Markets and Policy Education Committee, a group of leading university dairy economists who are identified in a later section. In addition to its work on the leaflet series, the committee has provided comments to the Secretary of Agriculture concerning federal milk marketing orders.

The program director has also participated in educational workshops sponsored by the Congressional Research Service for Congressional members and staff.

Dairy Market Database

Four specific sub-projects are included in this category.

1. Cornell has been involved in the development of a computerized database of publicly available dairy market statistics. Currently this microcomputer-based system is maintained by the NYS Division of Dairy Industry Services. State, regional, and national data are updated by the New York agency and the Wisconsin Agricultural Statistics Service. Thus, the first sub-project aims to 1) assist the statistical agencies to expand and enhance the database and 2) create additional utility programs that will facilitate the use of the database.
2. The second sub-project is the creation of a parallel database containing bibliographic citations of publications relevant to dairy market and policy analysis. Presently, over 2000 citations are categorized in a computer-based system according to topic or subject matter and other basic catalog information.
3. The third sub-project has been to develop a computer-based bulletin board at Cornell. The bulletin board would be a medium to enhance the sharing of data as well as other information among dairy researchers, extension workers, etc.
4. The fourth sub-project involves incorporating all appropriate databases into the National Dairy Database being developed by the Federal Extension Service, *et al.* The director of the Cornell dairy program is also the Lead Editor for dairy marketing and policy on the National Dairy Database project.

This project is primarily supported under NILDP, with supplementary assistance from other sources.

Statewide and Regional Extension Program

The Department of Agricultural Economics and Cornell Cooperative Extension have supported and maintained a dairy marketing extension program for many years. The program received a significant boost with the addition of a Statewide Extension Specialist for milk marketing in 1970.

Following a retirement in 1992, the position was somewhat rewritten and is now located in the Department as a Senior Extension Associate for the economics of dairy markets and policy. Dr. Mark Stephenson filled the new position in September 1993. The statewide and regional program is the major responsibility of the Senior Extension Associate, but contributions are also made by other program faculty.

The extension program has objectives similar to those listed under the core project Dairy Market and Policy Education. A distinguishing difference is that the statewide and regional program focuses more specifically on New York and the Northeast and includes more short term objectives, such as situation and outlook reports. For example, the *Northeast Dairy Marketer* is a monthly newsletter containing topical reports and market analysis for the Northeast dairy industry. As a merger of three previously independent letters in November 1992, it is a joint project of dairy marketing faculty at The Pennsylvania State University and Cornell.

Recognizing that a great deal of industry contact is made through county extension agents and regional specialists, workshops and training programs are held for New York and Northeastern extension field staff. Biannual outlook and training meetings are held for New York staff, and a triennial training school is held for regional staff, in cooperation with The Pennsylvania State University and the University of Vermont.

The Program also sponsors a forum for the exchange of information and ideas between Northeastern dairy market economists in industry, government, and academia. The Northeast Dairy Economists Group, organized and chaired by the Program Director, meets three to four times per year and includes some 20 to 30 regular participants.

Extending Cornell research is a particularly important objective. Two formal activities facilitate this. The first is written publications, including those specifically targeted for industry use such as *Dairy Marketing Notes*. The second is workshops and meetings. A specific example is the annual Cornell Conference on Dairy Market and Product Research, which is jointly sponsored by the Program on Dairy Markets and Policy and the Northeast Dairy Foods Research Center, which is headquartered in Cornell's Department of Food Science.

Specific NILDP Sponsored Sub-Projects

Research which is supported through NILDP funding is organized in sub-projects, each of which contributes to the broader objectives and project organization. Each year the program director reports on the progress and plans of ongoing sub-projects and outlines new sub-projects. This section outlines the sub-projects since the beginning of the Dairy Program. (Less formal work is also done, such as the 15 "Briefing Papers" which have been written in response to requests for quick analyses of topical issues.)

89-1 Analysis of alternative strategies for setting class I prices in Federal Milk Marketing Orders, in particular multiple base point pricing.

Progress report: Research results were used in a paper prepared for the 1990 Hearing on Federal Milk Marketing Orders. Further work is represented by sub-project 90-5.

89-2 Analysis of alternative methods for calculating milk equivalent levels of CCC dairy product purchases and their implications for supply/demand adjustments to support prices, prices farmers receive, and consumer prices.

Progress report: Two CPDMP Briefing Papers were prepared on this subject in 1990.

89-3 "Dairy Policy Issues and Options for the 1990 Farm Bill."

Progress report: Eighteen leaflets were distributed to approximately 1500 people in the dairy industry, academia and government agencies. Subsequent to the announcement that a national hearing of major federal order issues would be conducted beginning in September 1990, the leaflet series was extended. "Part II: The 1990 Federal Milk Marketing Order Hearing" contains six additional leaflets. Two leaflets in "Part I: The 1990 Farm Bill" also cover federal order topics. Over 100 evaluations of the leaflet series indicate that users found the series to be useful and rather widely shared. The respondents represented approximately equal shares of academic, producer, processor, and government users. On a scale of 1 to 5, where 5 indicates "very useful," respondents gave the leaflets on the 1990 farm bill an average score of 4.5 and the leaflets on the 1990 federal order hearing an average score of 4.2. A large percentage of respondents indicated that the earlier leaflets were used for their personal use and for limited distribution to colleagues. Broader distribution was also reported by academics (50%), producer organizations (50%), processors (32%), and government agencies (19%). Potential interest in a new leaflet series was equally high (cf. 91-5).

90-1 Analysis of basic price support options, including: 1) an extension of the price setting provisions of the Food Security Act, 2) a new program based on dairy parity and standby supply management programs, and 3) a deficiency payments approach.

Progress report: Seven 1990 CPDMP Briefing Papers involved analyses of alternative price support policies; related work was carried on under sub-projects 91-2 and 91-7.

90-2 Estimation of manufacturing costs for the butter/nonfat dry milk subsector and their implications for optimal plant structure and location and overall market performance.

Progress report: Research bulletins on this subject were released in September 1989 and June 1990. A thesis was completed in August 1990. Testimony for the 1990 Hearing on Federal Milk Marketing Orders was prepared at industry request.

90-3 Analysis of alternatives to the current M-W price as the basic formula price for setting federal order class prices.

Progress report: Extension leaflets on possible alternative price series were completed in 1990. USDA delayed releasing its report of alternatives until January 1992. Inasmuch as we were planning to use the USDA study as the basis for our further analysis, preliminary analyses were initiated using independently generated alternative price series. Our research on alternatives to the M-W price as the basic formula price in federal milk marketing orders focused on price and revenue impacts on fluid processors, manufacturers, and farmers. Implications of seasonal variations in the demand for class I and III products is specifically emphasized. Oral briefings were made to key industry groups and Congressional staff in 1991. After the hearing proposal was formally announced in 1992, an extension paper was written to describe in lay terms the proposals that had been made and their general ramifications. The research project resulted in a Master's thesis, dated January 1993, which explores several alternatives and their potential impacts on processors and producers.

90-4 Analysis of factors correlated with net cash farm income distributions.

Progress report: Usually the analysis of farm level impacts of changes in dairy policy focus on average or typical farms. This study uses complete production and financial records from a cross section of individual farms. The farm records represent 400 farms in New York, 1200 Pennsylvania farms, and 1500 farms in Wisconsin. The records have been analyzed to differentiate and describe those farms that rank highest in several financial performance measures from those that rank lowest. Similar analyses have also been done for herd size

strata. A Cornell research bulletin was published in 1992. Similar research bulletins out of The Pennsylvania State University and the University of Wisconsin at River Falls are being drafted by other members of the Dairy Farm Analysis Committee. A symposium on this project was presented at the 1992 annual meeting of the American Agricultural Economics Association, and two papers were presented at the 1992 annual meeting of the American Dairy Science Association. This sub-project is completed, but this line of research is continued in sub-project 92-1. In addition to the direct Cornell project, assistance was also provided to Texas A&M in constructing four New York dairy farms datasets for their FLIPSIM model in 1990.

90-5 Analysis of proposed changes to Federal Milk Marketing Orders.

Progress report: A CPDMP Briefing Paper was prepared in 1990 to review proposals submitted following the Secretary's initial request for hearing proposals. Research results were used to provide background and analysis for the 1990 hearing on federal milk marketing orders, at industry request. A research bulletin, published in 1991, reviews some of the key criticisms of federal orders and classified pricing in particular. A study of class I prices suggests that the pattern of low class I prices in the Upper Midwest and Far West and higher prices in the South and East is justified by market costs and present and expected future regional production and consumption patterns. Although this is generally consistent with regional price patterns now, the research identifies areas in which class I differentials could be higher or lower than current levels.

90-6 Trade-offs between manufacturing size economies and transportation cost in the efficient movement of milk and dairy products and the location of processing facilities.

Progress report: A thesis was completed in August 1990 and a paper on this subject was presented at the 1990 annual meeting of the Northeast Agricultural and Resource Economics Association. Basic information on size economies in manufacturing are combined with a highly disaggregated spatial model of dairy markets to explore the optimal location and size manufacturing facilities, recognizing trade-offs against assembly and distribution costs. The study also provided information relative to proposals that federal order pricing provisions be structured so as to create greater price incentives to encourage farmers to adopt seasonal production patterns more harmonic with dairy product sales. Testimony was prepared and submitted at industry request in September 1990 (cf. sub-project 90-2).

91-1 Potential disruptions to dairy product distribution systems due to natural disasters and implications for disaster planning.

Progress report: East Coast hurricanes and West Coast earthquakes have recently resulted in all sorts of problems, including difficulties in daily transportation scheduling and routing of milk and dairy products. This project illustrated how operations research techniques can be used to develop contingency plans. The specific empirical example was a simulated nuclear emergency at a New York power plant. A paper on this subject was presented at the 1990 annual meeting of the Northeast Agricultural and Resource Economics Association.

91-2 Analysis of the implications of the 1990 Farm Bill for U.S. dairy markets.

Progress report: This project attempted to assess implications of the dairy provisions of the 1990 farm bill for national supply, demand, and prices. A briefing paper was prepared for the House and Senate conference committee prior to final passage in November 1990. More informal briefings and papers were also prepared for the House agriculture committee.

- 91-3** Analysis of the potential effectiveness of multiple component pricing in directing changes in the relative production of milk components.
Progress report: A Cornell conference on this topic was held in March 1991, addressing the question of how well multiple component pricing is likely to serve in improving the coordination of the demand for and supply of milk components. The FY 1991 grant application specified that research under this sub-project would "be coordinated with industry proposals for specific changes, pursuant to the stipulations for a federal order hearing on or about May 1991." USDA has indefinitely postponed its analysis of component pricing and no national initiatives have been offered or contemplated. Hence, this sub-project was terminated. Industry efforts to implement component pricing in federal orders are currently proceeding in a steady but piecemeal fashion. Pending future industry or government interest in this subject, a new project may be initiated in the future.
- 91-4** Comparison of dairy farm performance measures and analysis of economic and sociological factors affecting farm performance between farms in the northeastern U.S. and neighboring Canadian provinces.
Progress report: New York and Ontario dairy farms provide an interesting comparison. The policy environments in the two areas are quite different, both with respect to dairy policy and social policies, such as health care. Structural characteristics of dairy farms are also quite different, even though the basic agronomic conditions are similar. This study attempted to generate original data to explore factors that differentiate dairy farms in these neighboring areas and family perceptions and attitudes about their environment and business. Analysis of a May 1991 survey has resulted in two selected papers presented at the 1992 annual meeting of the American Agricultural Economics Association. In addition, a series of eleven short articles for the Cornell publication *Dairy Marketing Notes* are being prepared; three were written in 1992, three were written in 1993 and will be published in 1994, the remaining papers will be written and published in 1994. Manuscripts were submitted to *Journal of Agribusiness* and *Rural Sociology*, these manuscripts have been reviewed, revised and resubmitted. Hence, this project is practically completed and is terminated as of this report.
- 91-5** Extension materials on dairy markets, pricing, and policy.
Project deadline: December 1994
Progress report: The Dairy Markets and Policy Education Committee is preparing a leaflet series entitled *Dairy Markets and Policy: Issues and Options*. This series presently consists of about 40 leaflets and will grow in number as needs dictate. The leaflet series has been drafted to be more broadly targeted and applicable than the two earlier series, which were more oriented toward specific 1990 legislative and administrative hearings. In addition, the new series covers more general marketing topics, as opposed to more purely policy subjects. A "user's group workshop" was held in February, 1993 to obtain feedback and help identify priorities and ways to enhance our educational efforts in the future. A group of two dozen people from industry, academia, and government participated. Although the leaflet series is intended to have longer-term usefulness and is not necessarily oriented toward the next farm bill, the Committee is mindful that the 1995 farm bill debate will soon begin; indeed discussions with Congress about alternative dairy support programs were engaged already in late 1993. For these reasons, the Committee is planning a national conference to be held in June, 1994, in the Twin Cities for the purpose of discussing policy options and presenting analyses to members of the dairy industry and policy-makers.

- 91-6** Analysis of changes in dairy import and trade policy resulting from a new General Agreement on Trade and Tariffs.

Project deadline: May 1994

Progress report: The objective of this study when it was conceived in 1991 was to analyze the effects of a new GATT agreement. Inasmuch as GATT discussions proved to be more protracted than originally expected, this sub-project was re-focused and extended. The study has been oriented to document historical dairy product trade patterns and describe existing mechanisms and institutions which shape international trade. The research is aimed at better understanding how internal adjustments to trade liberalization by trading countries might affect prices in different countries and long-term trade patterns. The thesis research project is emphasizing an empirical approach that is much more disaggregated than previous trade studies have been. The current model is more disaggregated in terms of world regions or countries, dairy products, and market levels. The model differentiates milk and dairy products on the basis of fat and nonfat composition, allowing for more realistic accounting of inter-product relationships than occurs when products are aggregated on a fats basis only, which has been the typical approach. In addition, regional trading agreements, such as NAFTA, increase opportunities for arbitrage, for example, Mexican imports of New Zealand skim milk powder may enable U.S. imports of Mexican cheese. Previous research has been limited by models that do not have the capability to deal with this aspect of actual dairy product markets. A prototype model has been developed and tested. Work on the full-scale model is underway. The thesis is expected to be completed by August. A research paper on the basic methodology was presented at an international conference in June 1993. The full-scale model is operational and the analysis of alternative trade scenarios is underway. The recent conclusion of the Uruguay Round will help to identify scenarios to be studied under this project. It is anticipated that the analysis will be completed during spring 1994.

- 91-7** Analysis of alternative inventory management programs.

Progress report: The Food, Agriculture, Conservation, and Trade Act of 1990 required USDA to study alternative "inventory management" programs and make a recommendation to Congress by August 1, 1991. This sub-project was undertaken at the request of members of the House dairy subcommittee and members of industry. Briefings were conducted in 1991 with members and staff of the House and Senate agriculture committees in response to requests for input and analysis with respect to proposed "inventory management" programs.

- 92-1** Representative farms for firm-level analyses of dairy farms and policy impacts.

Project report deadline: December 1994

Progress report: This sub-project represents a second phase of research, building upon sub-project 90-4. In the second phase, data sets are being constructed to represent farms which, taken together, encompass a range of farm characteristics and financial performance. These data sets will be combined with the FLIPSIM farm models developed at Texas A&M University to provide a basis for positive analyses of how different representative farms are impacted by alternative policies and other external events. Emphasis this year has been on building joint data sets from other universities participating in this project and adding additional years to the single year's data studied in project 90-4. A research paper on the New York data was presented at the meetings of the Northeast Agricultural and Resource Economics Association in June 1993, and a manuscript has been prepared for submission to *Agricultural and Resource Economics Review*. Two extension papers have been published, focusing on the multi-year comparisons of New York data. Ontario joined the project this year. By early 1994, we will have a complete pooled data set representing dairy farm records from New York, Pennsylvania, Wisconsin, Michigan, and Ontario. The first task of

the Cornell Dairy Farm Analysis Project Committee will be to provide a descriptive summary of the dataset. This will be followed by analyses of the pooled data similar to analyses that have been conducted with the New York data.

92-2 Analysis of liberalization in dairy product trade in North America.

Project deadline: August 1994

Progress report: Sub-project 91-6 is framed in the context of world trade. This sub-project focuses attention on trade in North America, particularly as it may be impacted by the North American Free Trade Agreement and the earlier Canada/U.S. Free Trade Agreement. Although the Canadian agreement precludes expanded dairy product trade at this time, the possibility for new or revised agreements, particularly in connection with a new GATT, suggests potential trade liberalization in the not-too-distant future. It would appear that the U.S. might enjoy substantial opportunities for increasing exports. Nonetheless, a more general equilibrium analysis suggests that substantial incentives would exist to make changes in Canada and Mexico that would improve their competitive positions. This project aims to analyze the short-term prospects for increased U.S. exports and the longer term potential for compensating adjustments in Canada and Mexico. Two graduate thesis research projects are underway which contribute to this sub-project. The Canadian study is nearing completion. The Mexican project has been involved in two major activities. The first is the development of data on the Mexican dairy sector; the second is the development of a methodology to simultaneously derive market-clearing conditions under a regime of *ad valorem* tariffs which vary between countries. A manuscript based on an innovative methodology has been drafted for submission to the *Journal of Regional Science*. Two symposia related to this work were held at the 1993 annual meeting of the American Agricultural Economics Association. One focused on the potential agricultural sector impacts of NAFTA; the second was oriented more toward research issues related to the empirical analysis of dairy trade. The Master's thesis focusing on Canadian/U.S. trade and sector impacts is scheduled for completion by May 1994. The Ph.D. thesis on Mexican/U.S. trade and sector impacts is scheduled for completion by December 1994.

92-3 Analysis of price formation and price transmission in dairy product markets.

Progress report: In 1991, Congressional and industry attention was drawn to the fact that retail prices did not decline correspondingly when farm milk prices fell precipitously in late 1990 and 1991. A graduate thesis project has focused on statistical estimation of causal price relationships and measurements of the length of adjustment lags and magnitudes of adjustments in prices transmitted across market levels for major dairy products. A selected paper was presented at the 1993 annual meeting of the American Agricultural Economics Association. The thesis has been completed. The results provide evidence for asymmetric price response in most dairy product market price relationships and indicates that asymmetry, in general, has been greater since 1987, a period characterized by very low, virtually inoperative, levels of dairy price supports. Analysis of the impact of farm price instability indicates that retail fluid milk and cheese prices are considerably higher as a result of farm price volatility. Retail prices for butter and ice cream are not adversely impacted by volatile farm prices. This project is terminated.

94-1 Regional mergers of federal milk marketing orders.

Project report deadline: December 1994

Plans: In December, 1993, USDA completed a hearing to consider the merger of 5 to 7 federal orders in the southeastern U.S. Mergers of orders to create geographically large regional orders have been discussed in the past, and, in general, order mergers have been

part of the trend in federal orders since the 1970s. Historically, marketing areas were defined around dominant, large cities. Regional orders are characterized by the grouping of two or more dominant city centers, as well as a geographically larger milk shed. This makes the calculation of a reasonable geographic price an intra-order consideration and has implications for how one looks at inter-order price alignment. The purpose of this project is to investigate and establish criteria for evaluating how to combine orders and the implications of regionalization of marketing orders.

94-2 Implications of farm price instability on dairy product markets.

Project report deadline: June 1995

Plans: This new project builds on project 92-3. The model developed under the previous project will be extended to incorporate non-price variables that we believe will enhance the predictive power beyond that of the pure marketing margin model. Analyses using the improved model will focus on studying the implications of farm level price instability, which has increased and been prevalent since the last cut in the support price for milk.

94-3 Changes in pricing and pooling in Federal and California milk markets.

Project report deadline: December 1995

Plans: The establishment of a new class under federal orders (class IIIa), a potential change in class II pricing (subsequent to a hearing that has been scheduled for 6 January 1994), the likelihood of a new basic formula price under federal orders, implementation of federal rules relating to state pricing programs under section 102 of the 1990 farm bill, the further growth of multiple component pricing plans in federal orders, ongoing pressures to modify class I differentials, and changes in pricing rules and pooling provisions in California are creating a host of new plant and producer prices and price relationships. This new study will document and describe recent and expected changes and analyze their likely marketwide implications in an integrated study.

94-4 Alternative price support policies for the 1995 farm bill.

Project report deadline: December 1995

Plans: Numerous options exist for price support policy under the 1995 farm bill. Presently, attention is focused on an approach called Self-Help. The distinguishing features of this approach is that it involves some level of industry control of certain policy instruments or their implementation, some level of producer responsibility for program costs, instruments to control production levels, and instruments to move surplus products to alternative markets. Other alternatives may be proposed at a later date. The purpose of this new project is to respond to Congressional and industry requests for analyses of farm bill options.

Personnel and Collaborative Arrangements

Cornell University offers a rich resource base to support this program. Presently, ten faculty and professional staff (including staff on contract funds and one open position that is in the process of being filled) devote substantial amounts of time to the area of dairy market and policy analysis, equating to about seven full-time positions). Cornell faculty are widely known for their work related to the dairy industry, policy, and dairy products. In addition, about ten graduate students are presently involved in dairy marketing and policy research, six of whom are directly associated with sub-projects identified in this proposal. In addition to this core group, the Department also has several faculty who contribute to the farm modeling and analysis sub-project. The food scientists associated with the

Northeast Center for Dairy Food Research, headquartered at Cornell, are another complement to the Dairy Program.

Dairy market economists at Cornell have a history of cooperation in research and extension programs with 1) food and animal science faculty at Cornell, 2) dairy researchers and educators at other universities, 3) government agencies and legislative bodies, and 4) cooperatives, firms, and trade organizations. Cooperative research agreements and more informal work have been conducted with USDA's Economic Research Service, Agricultural Cooperative Service, Agricultural Marketing Service, and Agricultural Stabilization and Conservation Service. Projects have also been supported by and/or conducted with the New York Department of Agriculture and Markets, and Cornell faculty have worked with staff in other state agencies, Congress, and dairy firms and organizations.

In managing this dairy research program, it is Cornell's policy to seek cooperation on projects with researchers and educators outside of Cornell. Part of this is, of course, reflected in Cornell's collaboration with Texas A&M on the National Institute for Livestock and Dairy Policy. In addition to this institutional relationship with Texas A&M, Cornell will seek working relationships with individuals having expertise relevant to the objectives and projects of the dairy program.

To date, two formal working groups have been established which include non-Cornell members. The first was initiated in 1989 and is involved with the third project--Dairy Market and Policy Education. Membership in the Dairy Market and Policy Education Committee has changed modestly over time and presently consists of the following:

Dr. Robert Jacobson (chair)	The Ohio State University
Dr. Robert Cropp	University of Wisconsin
Dr. Larry Hamm	Michigan State University
Dr. Harold Harris	Clemson University
Dr. Ronald Knutson	Texas A&M University
Dr. Andrew Novakovic	Cornell University
Dr. Joe Outlaw	Texas A&M University
Dr. Robert Schwart	Texas A&M University
Dr. Mark Stephenson	Cornell University
Dr. Robert Yonkers	The Pennsylvania State University

The second working group was established in 1990 to lead work under the second project--Dairy Farm Modeling and Analysis. In 1993, an additional member, representing Ontario, became a participant. The Dairy Farms Analysis Committee now consists of:

Dr. Wayne Knoblauch (chair)	Cornell University
Dr. Stephen Ford	The Pennsylvania State University
Mr. Robert Gardner	Michigan State University
Dr. Steven Harsh	Michigan State University
Dr. Andrew Novakovic	Cornell University
Dr. Mark Stephenson	Cornell University
Dr. Alfons Weersink	University of Guelph (Ontario)
Dr. Robert Yonkers	The Pennsylvania State University

The working groups that have been assembled for the Dairy Sector Modeling and Analysis project and the Dairy Market Database project is comprised of staff of the Cornell Program on Dairy Markets and Policy.

Appendix A

PUBLICATIONS ON DAIRY ECONOMICS BY CORNELL FACULTY, 1993

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Appendix C

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