DAIRY CATTLE NUTRITION PROJECT (DCNP) SANTA CRUZ, BOLIVIA

Report of the Final Impact Review 31 August to 6 September 1997

M Gill (NR International)

G Gilman (DFID NR Field Manager, Bolivia)
EXECUTIVE SUMMARY

1. The review team concluded that the project had been successful, had met all its objectives and had been enthusiastically viewed by FEDEPLE and local farmers.

2. The only negative aspect was the slow responsiveness of the local market to increased milk production. However, other opportunities for broadening the impact of the project in line with DFID's new focus were identified.

3. The following recommendations were made.

   Recommendation 3: If sufficient funds remain in the project budget, a licence and 'sentinels' to enable 250 farms to be monitored be purchased by DFID from the National University of Costa Rica to enable FEDEPLE to participate in the on-farm monitoring project which should lead to the development of a decision-support management system (cost US$10,000 plus portable computers) (para 44 refers).

   Recommendation 4: The possibility of extending the impact of the project towards addressing problems of human malnutrition be explored during the forthcoming NR advisers’ visit (para 47 refers).
Background

1. This project started in July 1994 with funding for an initial 2 years and was extended in August 1996 for a further year, to address additional objectives resulting from FEDEPLE's expansion into new milk catchment areas. One TCO (Liz Alderson) has been working with FEDEPLE on the project since the start. Her contract ends on 31 October 1997.

2. Dr Gill and Mr Gilman, together with Ms Brooks (LACAD) participated in the mid-term review, which recommended a final impact review in August 1997.

3. This review was undertaken between 31 August and 6 September 1997 and included visits within Santa Cruz, to Samaipata and half a day in La Paz. The terms of reference are attached as Appendix 1 and the Itinerary as Appendix 2.

4. The main output required by the TORs (TOR 6) was the Project Completion Report which is attached as Appendix 3. Further information on impact was required to meet the other TORs and is discussed in the following paragraphs.

TOR 1 - Evaluation of achievement of framework objectives (since mid-term review)

5. The general impression gained from CIAT, FEDEPLE and individual farmers confirmed the conclusions of the mid-term review mission, that the project had been successful in increasing milk production during the dry season and improving the standard of management of dairy farms around Santa Cruz. However, the data available to the mid-term review team were not sufficient to enable a quantitative assessment to be made. Some data had been included in the subsequent TCO's quarterly reports, but an early action of the Team was to request data from FEDEPLE against which the Team could evaluate achievement of each output, using the indicators in the logical framework as revised by the mid-term review team. These data together with those from the TCO reports enabled the following assessment of each output:

Output 1. Data on chemical composition and quality of local feeds and formulation of rations

Indicators:  

i)  

ii)  

iii)  

6. Two leaflets, one giving the chemical composition of local pastures and forages and the other the chemical composition of local supplements were printed and distributed early in the life of the project. In the last year, an MSc student has undertaken a project to assess the contamination of Brazil nut paste with aflatoxin. Samples have been taken and sent to NRI for analysis, with results requested by the end of September.

7. An in vitro laboratory has also been set up at CIAT (with money from this project), to enable digestibility of feeds to be analysed locally, by fermenting samples of feed with rumen innocula and measuring the volume of gas produced. Unfortunately,
Output 2. Cost-effective feed rations for the dairy industry incorporated into the FEDEPLE expansion programme

Indicators.  

i) Requests for ration formulations;  

ii) methodologies for expansion agreed and operating.

8. Ration formulations are popular with local farmers and 231 have been completed during the project. These are now being produced by Fernando Cadario of FEDEPLE and the end of this project should not therefore adversely affect their production.

9. The nutrition programme has followed the FEDEPLE expansion into the San Javier and Samaipata areas. The mission visited Samaipata (a very dry area) and observed at first hand the interest of farmers in the demonstration of the use of urea to increase the digestibility of maize stover. Interest is such that a local television channel had already made one programme of the treatment process and returned during our visit to record the opening of the treated feed.

Output 3. Validated recommendations on improved feeding practices appropriate to local conditions

Indicators.  

i) Recommendations on improved pasture management and forage utilisation;  

ii) recommendations made and recording undertaken on 10 farms.

10. A consultancy on pasture management took place in 1995 and confirmed that many of the pastures had been established 10-15 years ago and had not been fertilised or improved since. However, it appears that the project has stimulated awareness of the need for pasture improvement, as evidenced by a brief increase in the incidence of anthrax, which was attributed to the disturbance of soil for pasture improvement. Farmers are aware of the risks and have returned to vaccinating their stock against anthrax to enable pasture improvement to continue.
12. On-farm recording was started in year 1 and became closely integrated with a research project funded through the Livestock Production Programme of DFID's Renewable Natural Resources Research Strategy (RNRRS). The recording has been going for 18 months on some farms, less time on others and a workshop is planned for 1998, to present the findings to the farmers. Initial graphs of production on their farms have been given to participating farmers who have expressed enthusiasm. Some intend to use the results as a basis for culling their cows. Dr Peter Thorne (organiser of the workshop) will be asked to keep Mr Gilman informed of the date, programme and outcome.

13. Attempts to collect on-farm records during the feeding of sugar-can bagasse last year were less successful, due to the lack of commitment on the part of the recorders.

14. As noted later, one of the recommendations of this mission is that, if possible, licences for use of the VAMPP system of on-farm monitoring should be purchased for FEDEPLE to enable their technical staff to monitor farms and thus participate in another RNRRS-funded project, being undertaken by CIAT and the University of Edinburgh.

Output 4. Extension leaflets and other publicity/training materials on feeding and grazing management for small-scale farmers

Indicators:  
\[ \begin{array}{l}
\text{i)} \text{ Adoption of recommendations by FEDEPLE;}
\text{ii)} \text{ sustainable distribution system for leaflets;}
\text{iii)} \text{ area-specific feed recommendations;}
\text{iv)} \text{ feedback on video.}
\end{array} \]

15. 10 Extension leaflets have been produced and many have been reprinted, such is the demand. The 2 produced since the Mid-term review are: 'Economic Strategies for Feeding Dairy Cattle' and 'Tropical Legumes', plus 45 information sheets, a video and numerous television broadcasts. All have been very well received and much appreciated.

16. The sustainability of the production of these bulletins has been discussed on a number of occasions during the project. Charging for individual bulletins is not seen as feasible, since farmers would resort instead to photocopying. FEDEPLE already pay for the printing costs, so reproduction of bulletins already written is not seen as a problem.

17. Recommendations have been made on feeding strategies for a number of areas, including San Javier and Samaipata.

Output 5. Trained local staff in improved principles of animal nutrition and dairy business management

Indicators:  
\[ \begin{array}{l}
\text{i)} \text{ Staff assume full responsibility for programme;}
\text{ii)} \text{ improvements in management;}
\text{iii)} \text{ FEDEPLE implementing recommendations of agribusiness consultancy.}
\end{array} \]

18. 2 FEDEPLE staff (Fernando Cadario and Marie-Cruz Limpias) have been trained to MSc level during the course of the project and Fernando Cadario has received on the
job training in ration formulation and will be working with the BESO Agri-business consultant (Tim Machen) during September. Other FEDEPLE staff will also be working with Mr Machen and thus appreciation of the principles of managing dairy farms will be increased.

**Output 6. Effectiveness of technology transfer of improved animal feeding practices to farmers assessed and project impact measured**

**Indicators:**

i) Recommendations from consultancy visits;

ii) farmer responses;

iii) benefits to farmers.

19. There is no doubt that dissemination of information on improved feeding practices has been effective. FEDEPLE senior management estimated that 1450 out of the 1500 members had benefited from the project.

**Output 7. Links with other DFID-funded projects in the area established**

**Indicators.** Nutritional information adopted by other projects.

20. Links have been established with RNRRS-funded projects as mentioned above and with the desk-funded Amboro Park project being implemented by CARE. A representative from the latter project had attended a recent field day on urea treatment of maize stover.

**TOR 2 - Contribution of outputs to wider objectives:**

21. The original wider objectives of the project and indicators of achievement were:

**Wider Objective**

1. Improved livestock productivity in the Department of Santa Cruz through improved animal feeding practices and hence increased income of local dairy framers

2. Improved utilisation of natural resources in the production of milk.

**Indicators of Achievement**

1.1 Increased cost-effective milk production

1.2 Improved prosperity and welfare of local farmers

2.1 Reduced feed wastage

2.2 More efficient milk production

**Evidence:**

**Indicator 1.1**

22. The data from PIL on milk intake by the plant indicates that milk production during the dry season (April to July) in 1997, averaged 88,000l/day compared to 75,000l/day for the same period in 1996. However, this is only part of the story since if
individual collection plants can't cope with the volume of milk then cheese is produced. Attempts to estimate how much of the increase came from small producers was similarly thwarted since problems with some collection points have meant that milk is transferred to others. Thus, reliable comparative figures between years do not exist, although evidence for Yapacani and Portachuelo do show a significant upwards trend particularly during the dry months for the same number of producers between 1995 and 1997.

<table>
<thead>
<tr>
<th></th>
<th>Yapacani</th>
<th>Portachuelo</th>
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<tbody>
<tr>
<td>April</td>
<td>169,400</td>
<td>178,473</td>
</tr>
<tr>
<td>May</td>
<td>164,098</td>
<td>169,975</td>
</tr>
<tr>
<td>June</td>
<td>164,340</td>
<td>158,414</td>
</tr>
<tr>
<td>July</td>
<td>175,745</td>
<td>178,254</td>
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</tbody>
</table>

Unfortunately this trend was not in evidence in Nuevo Horizonte or Batavia, but the data are also inadequate since the number of cows from which the milk was produced is unknown.

The conclusion is that these data are collected at too gross a level for use in evaluating the impact of the project. On the other hand, the fact that PIL have plans for expanding the capacity of their plant to 200,000 l/day by the end of the year confirms that they are convinced by the scale of the increase. (FEDEPLE estimate that 146 million l of fresh milk and 5.5 million kg of cheese are produced in the Department of Santa Cruz on an annual basis.)

At a micro level, examination of the data from individual farms (Figs 1a & b) show significant improvements in dry season production this year compared to earlier years. Lactation curves for individual cows also show a marked improvement (Fig 2a-e) compared to the much flatter curves available in 1992 (example in Fig 3).

Another benefit of the project has been the decrease in the rejection of milk by the plant as being too acid. This problem was frequently mentioned in 1992 when the project was first identified, but the scale of the problem has gradually decreased as producers' understanding of nutritional principles has increased. Acid milk is still produced from time to time, but producers now know how to feed their cows to limit its effect.

Indicator 1.2

Data were not available to confirm the increased prosperity and welfare of the local dairy farmers, although throughout the life of the project we have been assured that this is the case. However, it is worth recording that 5 new feed companies have been established during the lifetime of the project which suggests that the prosperity of associated industries has been improved.

We were also given the following list of organisations which have benefited from the project: FEGASACRUZ, CIAT, Fomento Lechero (PIL), ASOCRALE, Universidad
PRODUCCION ANUAL DE LECHE EN LA GRANJA GUAYABA CHICA
PRODUCCION DE LECHE GRANJA SAN ANTONIO

Leche lts  Vaca: 104  Parto no.: 5  Fecha del parto: 25/8/94

Leche lts  Vaca: 178  Parto no.: 3  Fecha del parto: 21/12/94

Días después del parto

y más mediciones! Pulse cualquier tecla u [Esc]
Leche 1ts  Vaca: 16  Parto no.: 5  Fecha del parto: 27/4/94

Leche 1ts  Vaca: 121  Parto no.: 5  Fecha del parto: 16/4/96

Días después del parto
Pulse C para cambiar escala o cualquier otra tecla para seguir
Leche lts  Vaca: 252  Parto no.: 2  Fecha del parto: 1/1/97

Días después del parto
Pulse C para cambiar escala o cualquier otra tecla para seguir
** * * NAICO * * *
Leche lts Vaca: 252 Parto no.: 2 Fecha del parto: 1/1/97

23 __ * _** _** *__

15 ____________ * __________ *

8 ____________

0 44 87 131 174 218 261 305
Días después del parto
Pulse C para cambiar escala o cualquier otra tecla para seguir
Indicator 2.1

29. The following 6 by-products were previously burnt or otherwise wasted, but are now sold for incorporation in animal feeds: soya-hulls, cottonseed hulls, leaves and stem of soya, brewers' grains, brewers' yeast and hydrolised bagasse.

30. The use of poultry litter, molasses and urea in animals feeds has also increased.

Indicator 2.2

31. The measure of efficiency was not specified and as referred to above, the lack of data tends to preclude quantitative evaluation. However, the decreased problem of acid milk is one parameter of increased efficiency which illustrates the impact.

TOR 3 - Lessons learnt for future DFID interventions:

(i) the advantages of working directly with beneficiaries (farmers) as well as with intermediary users: the former gives instant feedback and rapid impact, while the latter should facilitate sustainability;

(ii)

(iii) one key aspect was the ability of the project manager to deliver the desired solutions without compromising her technical standards;

(iv) another positive aspect was the opportunity to work with a commercially focused non-government organisation (FEDEPLE) which remained enthusiastic about the project from start to end.

33. The lessons learnt from examining the positive aspects are nothing new for DFID, but emphasise the benefits of logical frameworks with defined indicators, the need to match the TCO to the project and to locate the project in an organisation which is enthusiastic about the project.

34. Only one major constraint to the impact of the project was identified: not all of the increased milk production could be sold as liquid milk. Current per capita consumption of milk in the Santa Cruz area is <40l/day and although higher than the national average this is considerably below average levels in other countries in South America. However,
40. A second possibility is for FEDEPLE to borrow money at one rate and lend on to farmers to enable them to undertake nutrition improvements at a higher rate. FEDEPLE has experience of borrowing money at one rate (18%) and lending on to farmers at a higher rate (24%). (It is difficult for people living in rural areas to borrow money and normal interest rates for such loans vary from 2-3%/month). FEDEPLE (through Fomento Lechero) has an established track-record in managing credit programmes, with money from the World Food programme. However, this loan will not last indefinitely. FEDEPLE would therefore like the consultant to provide the basis for calculating an incremental interest rate, which FEDEPLE would need farmers to generate income to pay for the nutrition unit. The risks to FEDEPLE should be minimal, since they can recover
the loan via the milk cheques and the risks to the farmers ought to be low, since investments to improve pasture management etc should also improve the profitability of beef production, should the market for milk not be sustained.

41. Following the discussion, the Terms of Reference for Tim Machen were modified as follows:

(i) Make financial analysis of dairy enterprises representative of family run units, small, medium and large farms, giving a total of 11 examples.

(ii) Develop a system whereby FEDEPLE extension workers can assess the constraints to efficient milk production on individual farms, thence make recommendations as to appropriate improvements and if credit is necessary, assess the risk associated with that credit.

(iii) Visit money lending agencies in Santa Cruz to assess their requirements for lending money and draw up a draft proposal for FEDEPLE to present to one of these agencies.

42. Since the end of this mission, MG has followed up one possibility of finance from Europe, through the Economic Development Co-operation based in the Netherlands, but with a Regional Office in Montevideo and has suggested that FEDEPLE make contact with that office and explore the potential for borrowing money.

TOR 5 Recommendations to enhance sustainability of the nutrition unit

43. In other countries, providing small producers with access to cows or credit to enable them to move into the Dairy sector has proved a successful way of helping them to improve their income and move away from the poverty trap. However, it may be difficult to identify sources of credit prepared to lend to FEDEPLE in Bolivia.

Recommendation: It is recommended that FEDEPLE be given any help possible in identifying a source of credit to ensure that the potential impact of the project can be realised.

44. One of the keys to improving management at the farm level is to encourage the recording of production data on-farm. An RNRRS-funded project being undertaken by CIAT and the University of Edinburgh has established an on-farm monitoring system in the Santa Cruz area and for a relatively low investment, FEDEPLE technical staff could be provided with the software and portable computers to enable them to participate in the study. This should enhance the implementation of the project findings and thus generate more income for FEDEPLE to support the nutrition unit.

Recommendation: if sufficient funds remain in the project budget, a licence and 'sentinels' to enable 250 farms to be monitored, be purchased by DFID (cost US$10,000 plus portable computers) from the National University of Costa Rica to enable FEDEPLE
This should lead to the development of a decision-support management system.

**TOR 6 - Draft a project Completion Report**

45. A draft PCR is attached as Appendix 3

**Conclusions**

46. Working with the Dairy sector in Bolivia has proved very successful. The potential to increase milk production now exists, if it can be realised. The President of FEDEPLE (who is also the President of the national association) has requested assistance from DFID in disseminating the achievements of the DCNP to other parts of Bolivia. Requests for nutritional assistance have been sent to FEDEPLE by Associations in Beni, Santa Cruz valleys, Cochabamba Tropica, Chiparre and Tarija. However, the question of the market for increased milk production in each area would need to be explored.

47. Impact of increased milk production does not have to be measured in economic terms. Given the emphasis which the new governments of Bolivia and the UK are placing on poverty eradication, another option is to use the increased milk production to try to decrease child mortality in the poorer sectors of Bolivian society. There is a genuine interest both at the level of FEDEPLE and the government in providing milk to school-children, to improve their nutritional status and thus their health. It is suggested that attention is given to the potential impact of a project which works with the Dairy industry to improve the health of children through the provision of milk in other regions.

**Recommendation:** it is recommended that the possibility of extending the impact of the project towards addressing problems of child malnutrition be explored.

**Acknowledgements**

48. We are grateful once again to FEDEPLE for hospitality, to Liz Alderson for making the arrangements and accompanying us throughout the visit.

49. It has been a pleasure to work on this project, largely due to the enthusiasm of FEDEPLE and the TCO. Grateful thanks are due to all concerned for making the consultancy visits so enjoyable.
The consultant is to supply services to the Government of Bolivia.

The DFID Final Impact Review Mission will consist of the NR Field manager for Bolivia (G Gilman) and a consultant Animal Nutritionist (Dr M Gill). The mission will be five working days in Bolivia including up to two days of field trips and one day of discussion in La Paz. One further day will be allowed for report preparation.

In particular the mission will:

1) Briefly evaluate the extent to which project framework objectives have been met, with particular reference to progress made since the Mid-Term review mission.

3) On the basis of (2) above, briefly discuss any lessons learnt for future DFID interventions.

4) Assess the current sustainability of the nutrition unit, including consideration of the ability of local staff to take responsibility for the programme, and the placement and support of the unit within the larger FEDEPLE organisation and related institutions.

6) Draft a project completion report
APPENDIX 2

ITINERARY AND PERSONS MET

DATE

Sun 31 August  am  Arrival of Dr Gill
am  Meeting of Mr Gilman, Ms Alderson & Dr Gill
pm  Reading reports etc

Mon 1 September  am  Meeting with Carlos Nagishiro on Brazil nut project
am  Meeting with Sres Javier Suarez, Javier Velarde, Johan Frerking & Dr Julio Roda of FEDEPLE
pm  Discussions with Chris Wood (laboratory consultant), Fernando Cadario and the CIAT technicians on the mechanics of measuring gas production in vitro and the use to which the method will be put.
pm  Discussions with outgoing Director of CIAT (Gustavo Perera) and Franz Rojas (Head of Animal Production) on the pasture programme and collaboration between the DCNP and CIAT projects.
pm  Inauguration of the gas production laboratory.
pm  Dinner with Tim Machen (BESO consultant)

Tues 2 September  am

pm

pm

Wed 3 September  am  Field visit to Mairana to witness opening of maize treated with urea, together with farmers and local television reporter
pm  Return to Santa Cruz
pm  Preparation of Commentary for FEDEPLE

Thurs 4 September  am  Preparation of Commentary for FEDEPLE
am  Visit to PIL, meeting with Mario Suarez Suarez (President), Lic Jose Luis Parada (Head of Administration and Finance), Lic Guillermo Ribera (General Manager)
pm  Lunch with Tim Machen
pm  Meeting with Sres Javier Suarez, Johan Frerking & Dr Julio Roda of FEDEPLE
pm  Dinner hosted by FEDEPLE
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>Fri 5 September</td>
<td>am</td>
<td>Meeting with Fernando Cadario, Johan Frerking, Liz Alderson (FEDEPLE) and Mario Herrero (University of Edinburgh, leader of RNRRS livestock project with CIAT). Joined part-way through by Tim Machen.</td>
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<tr>
<td></td>
<td>noon</td>
<td>Depart for La Paz (GG, EA, MG)</td>
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<td></td>
<td>pm</td>
<td>Meeting with ??? and Ing. Moises Zapata at Ministry of Rural Development</td>
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<td>Meeting with Ing Modesto Zeballos of the Ministry of Agriculture and Livestock</td>
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<td></td>
<td>pm</td>
<td>Drafting the PCR</td>
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<td>Sat 6 September</td>
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<td></td>
<td>pm</td>
<td>MG left La Paz for UK</td>
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PROJECT COMPLETION REPORT

(If Logical Framework is attached to the PCR, questions marked ‘(*)’ need not be completed)

A: BASIC DATA

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<th>SECTOR: Agriculture and livestock</th>
<th>MIS CODE</th>
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<tbody>
<tr>
<td>PROJECT/PROGRAM TITLE: Dairy Cattle Nutrition Project</td>
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<tr>
<td>BRIEF DESCRIPTION: Support to the Dairy Farmers’ Association of Santa Cruz (FEDEPLE) for the provision of advice and training in the field of animal nutrition</td>
<td></td>
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<tr>
<td>LEVEL APPROVED BY:</td>
<td>DATE APPROVED:</td>
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B: OUTPUTS OF IMPLEMENTATION PHASE

1. INITIAL (*):
   (if there is a Logical Framework if there is a Logical Framework (LF), extract from outputs line; for Programme Aid or ATP, extract from appropriate approval document; for Process Projects, insert whatever outputs existed at start of project - if this is not possible insert earliest available outputs.)

1. Obtain data on chemical composition of local feeds
2. Formulate improved feed rations for Dairy industry
3. Develop recommendations on improved feeding practices appropriate to local conditions
4. Work with small-scale farmers to evaluate these recommendations
5. Prepare extension leaflets on feeding and grazing management for small-scale farmers
6. Train local staff in improved principles of animal nutrition

2: AMENDMENTS:
   (where outputs have been revised over the lifetime of the project insert the most recently revised set of outputs).

1. Data on chemical composition and quality of local feeds and formulation of rations
2. Cost-effective feed rations for the dairy industry incorporated into the FEDEPLE expansion programme
3. Extension leaflets and other publicity/training materials on feeding and grazing management for small-scale farmers
4. Trained local staff in improved principles of animal nutrition and dairy business management
5. Effectiveness of technology transfer of improved animal feeding practices to farmers assessed and project impact measured

Printed: 15 September 1997
PCR Ver. 15 September 1997
6. Links with other DFID-funded projects in the area established

3: IF OUTPUTS HAVE BEEN AMENDED GIVE REASONS WHY:

1. Project extended to support expansion of FEDEPLE into new areas
2. To match new opportunities to enhance project impact
4: ACHIEVEMENT: (mark with an 'X'. If outputs have been amended give two ratings: one against the initial output (I) and one against the latest revised outputs (R))

<table>
<thead>
<tr>
<th>Outputs completely realised</th>
<th>I</th>
<th>R</th>
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<tr>
<td>Outputs largely realised</td>
<td></td>
<td></td>
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<tr>
<td>Outputs partially realised</td>
<td></td>
<td></td>
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<tr>
<td>Very limited realisation of outputs</td>
<td></td>
<td></td>
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<tr>
<td>Outputs completely unrealised - project abandoned</td>
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</table>
C: FINANCIAL PROFILE

1. INITIALLY APPROVED ODA TOTAL COMMITMENT (in £'000s):

2. TOTAL ODA COMMITMENT AFTER ANY SUBSEQUENT AMENDMENTS (in £'000s):

3. EXPENDITURE PROFILE (by financial year in £'000s):

<table>
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<th>F/Y:</th>
<th>F/Y 1</th>
<th>F/Y 2</th>
<th>F/Y 3</th>
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<th>F/Y 7</th>
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<td>Initial Commitment, Forecast:</td>
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<td>Actual Expenditure:</td>
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4. WHEN COMMITMENT CHANGES WERE SOUGHT, WERE THEY PROPERLY JUSTIFIED AND EXPLAINED? (enter Yes or No):

   EXPLAIN AND COMMENT:

5. ACTUAL EXPENDITURE AS % OF INITIALLY APPROVED COMMITMENT:

6. ACTUAL EXPENDITURE AS % OF COMMITMENT AFTER AMENDMENTS:
D:

1:

September 1997

Annual  Senior Animal Health  October 1995 (1 day)  Dr L M Bell
& Production adviser

2:

<table>
<thead>
<tr>
<th></th>
<th>To achieve initially intended outputs (up to the time of any change)</th>
<th>To achieve revised outputs (if applicable, subsequent to any change)</th>
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<tr>
<td></td>
<td>ODA Activities/Inputs</td>
<td>Recipient Government Activities/Inputs</td>
</tr>
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<td>(a) Appropriate?</td>
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<td>1</td>
</tr>
<tr>
<td>(b) Sufficient?</td>
<td>1</td>
<td>1</td>
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<tr>
<td>(c) Timely?</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(d) Well-coordinated?</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(e) Efficiently procured and delivered?</td>
<td>1</td>
<td>1</td>
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EXPLAIN AND COMMENT:

Revised Outputs:
++ FEDEPLE support to first agribusiness consultancy was disappointing


Printed: 15 September 1997
PCR Ver. 15 September 1997
GAP M1 Annex 1
5: ACTUAL IMPLEMENTATION TIME AS % OF INITIALLY PLANNED IMPLEMENTATION TIME:
100% for phase 1 & 100% for extension

EXPLAIN AND COMMENT:
All original outputs were achieved within original deadline, new outputs were added for project extension and these were achieved within the planned time limit.

E: CONDITIONS

(Set out each individual project condition - initial and subsequent amendments - in the table below and for each rate whether the condition was:

For ratings 1 and 2 only assess to what extent compliance had on the achievement of objectives, and for 3-5 only assess to what extent the lack of compliance had on the achievement of objectives:

D = Significant Negative Effect
E = Major Negative Effect

Conditions can be extracted from intergovernmental agreement, Logical Framework, or approval document.
Additional space will be created within the table if insufficient space exists).

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>COMPLIANCE (1-5)</th>
<th>For Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,2</td>
<td>3,4,5</td>
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<tr>
<td></td>
<td>Effect (A-E)</td>
<td>Effect (A-E)</td>
</tr>
<tr>
<td>Initial:</td>
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</tr>
<tr>
<td>(a)</td>
<td>ADEPLE (later FEDEPLE) identifies suitable counterparts</td>
<td>1</td>
</tr>
<tr>
<td>(b)</td>
<td></td>
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<td>(c)</td>
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<td>(d)</td>
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<td>(...)</td>
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<tr>
<td>Subsequent Amendments:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>No amendments</td>
<td></td>
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<tr>
<td>(b)</td>
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<td>(d)</td>
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<td>(...)</td>
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</table>

EXPLAIN AND COMMENT:
The support given by FEDEPLE to the project as a whole and the TCO in particular was excellent. That support made a major contribution to the success of the project.
**F: ACHIEVEMENT OF PURPOSE, GOAL AND PIMS MARKERS**

**Immediate Objectives: Purpose**

<table>
<thead>
<tr>
<th>Rating [1-X]</th>
<th>Initial:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. Obtain data on chemical composition of local feeds</td>
</tr>
<tr>
<td>1</td>
<td>2. Formulate improved feed rations for Dairy industry</td>
</tr>
<tr>
<td>1</td>
<td>3. Develop recommendations on improved feeding practices appropriate to local conditions</td>
</tr>
<tr>
<td>1</td>
<td>4. Work with small-scale farmers to evaluate these recommendations</td>
</tr>
<tr>
<td>1</td>
<td>5. Prepare extension leaflets on feeding and grazing management for small-scale farmers</td>
</tr>
<tr>
<td>1</td>
<td>6. Train local staff in improved principles of animal nutrition</td>
</tr>
</tbody>
</table>

**Subsequent Amendment: Purpose**

Animal feeding systems diversified and improved through the better utilisation of local natural resources and better practices.

**Wider Objectives: Goal**

<table>
<thead>
<tr>
<th>Rating [1-X]</th>
<th>Initial:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial</td>
</tr>
</tbody>
</table>

**Initial:**

1. Improved livestock productivity in the Department of Santa Cruz through improved animal feeding practices and hence increased income of dairy farmers.  
2. Improved utilisation of natural resources in the production of milk.

**Subsequent Amendment:**

Incomes of small dairy farmers in the Department of Santa Cruz raised through improved milk production.

**PIMS Markers assigned to ODA Priority Objectives**

| Priority Objectives | Marker 1-4 |

---

Additional space will be created within the table if insufficient space exists.
2. OVERALL ACHIEVEMENT OF IMMEDIATE OBJECTIVES/PURPOSE
   (given the ratings in question 1 give an overall rating of immediate objectives/purpose):

   The overall rating is 1, all immediate objectives, revised as a single Purpose have already been achieved or are expected to be so shortly.

3: LIST THE CONDITIONS NECESSARY FOR SUSTAINABILITY TO BE ACHIEVED:

   1. Counterparts remain in post
   2. FEDEPLE can obtain credit on behalf of small-scale producers.
   3. Price of milk to consumers remains stable or increases.
   4. Demand for milk and milk products increases in line with FEDEPLE projections.

4: DO YOU EXPECT THAT THE PROJECT WILL BE SUSTAINABLE?
   (enter Yes, No or Don't know):

   There appears to be strong government recognition of the success of the project and support for the future expansion of milk production.

   EXPLAIN AND COMMENT: (for example, is project likely to achieve impact not originally envisaged; should the judgement on sustainability be qualified?)

G:
1:

   (a)

   ii. The benefits from delivering exactly what the producers required.
   iii. The importance of adaptability of the Project manager without compromising his/her technical standards.
   iv. The benefits of working with a commercially focused non-government organisation.

   (b) Negative aspects which may be avoided in future:
   i. More attention should have been paid to local sustainability at the start of the project, e.g. milk marketing infrastructure

   (c) Other/General lessons:
   i. It is not always easy to predict how a market will develop at the start of a project, particularly if macro-economic effects may be significant. However, perhaps the monitoring of such effects should have been included in the TCO's TORs.
H: EX-POST EVALUATION

IS THIS PROJECT/ PROGRAMME CONSIDERED PARTICULARLY USEFUL FOR FURTHER EVALUATION? (enter Yes or No): yes

(If yes, place an "x" in box(es) which apply)

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>(a)</td>
<td>Innovative</td>
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<tr>
<td>(b)</td>
<td>Particular relevance to achieving ODA’s priority objectives</td>
</tr>
<tr>
<td>(c)</td>
<td>Rapidly increasing involvement in sector</td>
</tr>
<tr>
<td>(d)</td>
<td>Replicable project</td>
</tr>
<tr>
<td>(e)</td>
<td>Continuing project</td>
</tr>
<tr>
<td>(f)</td>
<td>Other (please specify):</td>
</tr>
</tbody>
</table>

EXPLAIN AND COMMENT

The project was very successful and the progress of the dairy industry in the Santa Cruz area could be relatively easily monitored in the future.