Ministry of Agriculture & Forestry: Agricultural Recover Project (ARP)

MAF's first .NET application assists disaster affected farmers

On 17 March 2004 Cabinet agreed to a series of measures to provide financial relief to farmers in the lower North Island who were affected by the violent storms of 15 and 18 February 2004. This programme is referred to as the Agricultural Recovery Programme (ARP). Cabinet authorised the Ministry of Agriculture and Forestry (MAF) to develop the operational details of this programme. The ARP system went live in May 2004, after a short two month design and build project.

The ARP Programme consists of a flexible two-stage response process:

1. The first stage of the process involves assessing applications for eligibility.
2. The second stage of the process focuses on the approval and payment of claims made by farmers.
    - Claims must be for the reimbursement of costs incurred in restoring essential farm infrastructure or damaged crops.
    - Applications and claims are considered by local facilitators and assessment committees.
    - Approved claims are paid by MAF, on behalf of the Government, by direct credit to the farmer's nominated bank account.

A network of regional Agricultural Recovery Facilitators and committees rely on the support of the ARP database system for the collection, recording, distribution and reporting of registration and claims data. The ARP system is also used to report to Cabinet on the progress of the programme, including the total estimated cost of assistance, the amounts claimed, and the amounts paid.

The ARP application manages –

- multiple claim categories,
- multiple types of claim items within each category,
- a variable number of claim attributes, and
- different reimbursement rates for different categories.

For example, essential "on-farm" infrastructure damage is reimbursed at 75%, and includes claim categories such as boundary fences, access roads, bridges and dams, while cropping is reimbursed at 90%.

Attributes of claims include

- length,
- type of work,
- items being replaced,
- estimated cost,
- actual claim costs.

Payments are only made when claims exceed a $10,000 threshold.

Benchmarking, which was a key requirement of the system, allows facilitators to compare estimated costs with an objective benchmark cost during the approval process.

MAF used RAD (Rapid Application Development) to deliver the system in three phases.

1. ***.NET pilot***

   This system was selected by MAF as an architecture pilot: the application was developed in the Microsoft .NET environment, in line with MAF's newly adopted systems architecture framework. System design demonstrated the appropriate uses of various .NET technologies, including: Active data objects (ADO.NET) for data access, Visual Basic.NET for business logic, C# for enterprise re-usable services, and ASP.NET for Web application development. (Reporting is provided using Crystal Reports.)

2. ***Shared Services Pilot***

   Although the scope of this project was limited, the system development demonstrated the appropriate implementation of security and audit shared service that can be re-used and enhanced by future MAF development projects.

3. ***Full Deployment***

   At the beginning of March 2005 the system had been used to process claims from 217 applicants to the value of $10.5 million.

Programme Re-Use

The Agricultural Recovery Programme was developed as a response to a natural disaster. Future disasters may require a similar type of recovery assistance programme. In the light of this, the system was developed with flexibility in mind. A future programme will consist of similar *processes* (registration, claim estimation, estimate approval, claims, claim approval, payments, and appeals) but will have different *categories* against which claims can be made, and with different claim item *attribute measures* – the data that is used to record and validate estimates and claims.

For these reasons the ARP system was developed as a flexible, data driven system. This means that a new instance of the database could be implemented quickly in response to a new disaster, and can be configured easily by programme administrators. Administrators can adjust aspects of the system quickly, relevant to any new disaster (survey questions, valid response options, measures and units) with only minimal software developer intervention.