

NEWS FEATURE

If the world went out with a bang, New Zealand would live on with a whimper. LINDSAY CLARK examines the options of post-nuclear life.

# Nuclear aftermath

**P**EOPLE in New Zealand would suffer from traumatic feelings after a nuclear war in the Northern Hemisphere.

Many would have strong forebodings of death even though everyone was alive and well and everything appeared normal.

In the first few weeks after a nuclear war New Zealanders would experience severe psychological pressures associated with loss and fear though physically they would be scarcely touched by nuclear radiation.

The destruction of so much of humanity, the deaths of millions of people in combatant countries and the abrupt loss of ties with people overseas would overwhelm many with feelings of loss and dislocation.

This is the picture of life painted in the Planning Council book *New Zealand After Nuclear War*, published last week.

How people would react to a cataclysmic disaster which despite the lack of immediate personal danger will change their whole way of life is unknown.

In natural disasters such as the recent Bay of Plenty earthquake people respond, contrary to popular belief, with a remarkable degree of self-control and quick adaptation to changed circumstances.

But with technological catastrophes such as chemical spills or nuclear plant accidents such as that of Three Mile Island or Chernobyl people respond in a much more unpredictable way than to natural disasters.

The strongest effect of the Three Mile Island accident in 1979 was demoralisation leading individuals to feel helpless and depressed.

The first concern after a Northern Hemisphere nuclear exchange will be to ensure that family members are safe and together, preferably in their own homes where they can decide together what they will do next.

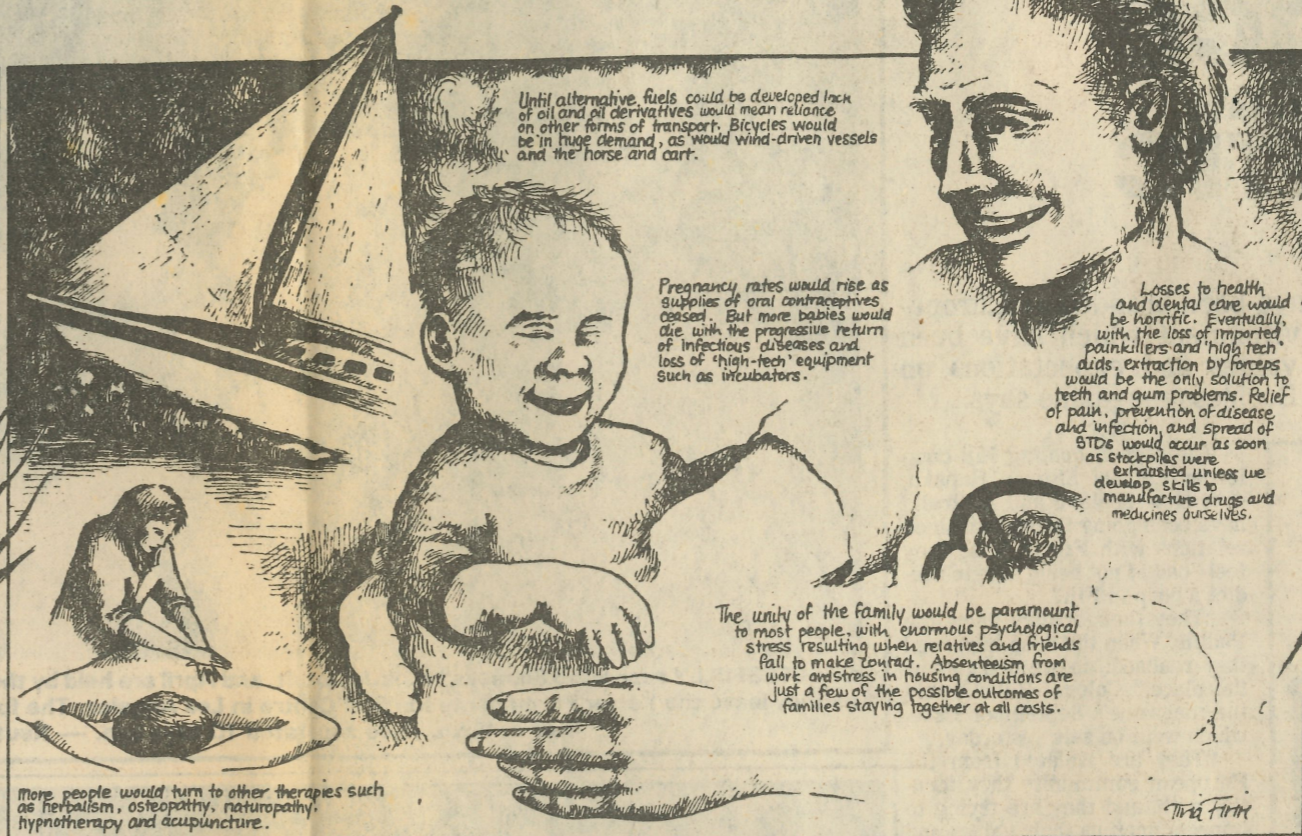
The second immediate concern will be to seek immediate and detailed information about the nuclear war overseas, about victims and about preventative measures that can be taken.

There is no certainty that New Zealand will not be a target.

Those living in cities or in other potential target areas may want to flee to the countryside.



Rural areas would be as hard-hit as urban. Cooling effects of a nuclear winter plus loss of fertilisers and mechanical aids would seriously affect crop yields. There would be immediate need to build up seed stocks, bring in manual labour, diversify crops and use alternative fertilising methods.



Until alternative fuels could be developed lack of oil and oil derivatives would mean reliance on other forms of transport. Bicycles would be in huge demand, as would wind-driven vessels and the horse and cart.

Pregnancy rates would rise as supplies of oral contraceptives ceased. But more babies would die with the progressive return of infectious diseases and loss of 'high-tech' equipment such as incubators.

Losses to health and dental care would be horrific. Eventually, with the loss of imported painkillers and 'high tech' aids, extraction by forceps would be the only solution to teeth and gum problems. Relief of pain, prevention of disease and infection, and spread of STDs would occur as soon as stockpiles were exhausted unless we develop skills to manufacture drugs and medicines ourselves.

The unity of the family would be paramount to most people, with enormous psychological stress resulting when relatives and friends fall to make contact. Absenteeism from work and stress in housing conditions are just a few of the possible outcomes of families staying together at all costs.

More people would turn to other therapies such as herbalism, osteopathy, naturopathy, hypnotherapy and acupuncture.

Rural areas and Maori communities with access to productive land to grow food and with stronger communal organisations are likely to show more resilience to the crisis.

For many there may be a conflict between meeting work obligations and staying with their families. Absenteeism could plague essential industries such as food distribution and transport.

No one is likely to starve in the post-nuclear New Zealand, though the variety and amount of food available is likely to be restricted quite quickly.

Radioactive fallout is unlikely to be of consequence for crops and stock except milk, which would probably be too contaminated to drink for two months if nuclear weapons were exploded in Australia.

Bread might soon be in reduced supply as less wheat could be grown because of the cooler climate. The reports predict a 3 degree Celsius drop in average temperatures.

With New Zealand's food ex-

port markets overseas destroyed overnight, there would be huge stocks of meat, cheese, milk powder, butter and apples available for domestic use.

In cities and towns it would make sense for people to use their sections to grow more vegetables since they will eventually become an important part of the daily diet. But ensuring adequate supplies of seed would be difficult in the first year after a nuclear war.

Health problems would emerge but after a few weeks it would be the realisation that people would have to survive without almost all modern medicines that would be the main worry. Most medicine supplies would last only three to six months.

Clean water would be a problem with stocks of chlorine used to purify water lasting only six months.

Sewage could become a serious health problem if pumps or electricity supplies failed. Open toilets which would have to be dug in the backyard could lead to

stomach disorders and the spread of disease.

If there were any high bombs set off over Australia the electromagnetic pulse that would reach New Zealand in a split second could effectively wreck electrical communication and transport systems, though people would be left untouched unless they happened to be holding a long wire where the pulse could be magnified into a severe electrical charge.

It would also render the Marsden Point refinery and the Motonui synfuel plant inoperable and sharply cut supplies of diesel and petrol.

The loss of modern transport systems would see the country revert to sail, horse, bicycle and foot.

Perhaps as traumatic as news of the war itself, the economy would be so changed by the ending of all exporting and importing that up to 50 per cent of people would become unemployed. This would be a catastrophic depression, four times worse than the 1930s.

## Radioactivity not main threat

**T**HE most surprising conclusion of the authors of *New Zealand After Nuclear War* is that radioactive fallout would not be a major threat to health after such a war.

This flies in the face of a long-held belief that radiation would be the main effect felt after a large-scale atomic war.

The authors of the Planning Council book make their case like this.

They assume that nuclear war is largely confined to the Northern Hemisphere and that New Zealand is not a target but Australia receives up to eight bombs.

New Zealand would be protected against radiation damage by three factors — the huge distance from the expected main theatres of war in Europe, the Soviet Union and North America; the rapid decrease in the radioactivity in fallout over time; and the limited amount of radio-

activity which could cross the meteorological barrier of the tropics.

A radiation dose of 600 rems (a measurement of how much radiation energy is absorbed) in a few days would almost certainly kill most humans. A dose of 350 rem to 450 rem would kill 50 per cent of healthy adults over a three-day period. Levels of 100 rem or more would only occur in New Zealand if it was a target.

An hour after an explosion the radiation dose could be 1000 rem an hour. After two hours the rate could have dropped to 400 rem an hour. After two days it would be down to 10 rem an hour and after a month it would only be 0.4 rem an hour.

When nuclear bombs go off at ground level, sending huge amounts of radioactive material into the air, about 50 per cent will fall in the local area within two days. A further 35 per cent of fallout will penetrate the lower

atmosphere but will remain within the hemisphere.

Only 13 per cent of radioactive fallout can penetrate high enough into the upper atmosphere to be capable of being carried across the tropics. But in fact about 75 per cent of this high level global fallout would drop in the Northern Hemisphere.

The average radiation dose received in the Southern Hemisphere would be almost 20 times lower than the northern hemisphere. Under worst case estimates four to six rems of radiation would be received in total over a 50-year period — a smaller amount than the natural background radiation received from rocks, soil and space (10 rems).

But though New Zealand would not suffer radiation sickness or immediate death there would be an estimated 1 per cent rise in cancers over the following 70 years.

**Pain, death, disease in wake of bomb**

**M**ORE unwanted pregnancies and more toothache would be just two health consequences from being cut off from imported medicines, on which New Zealand is almost 100 per cent dependent.

More diseases, more pain and more deaths would follow a return to 19th century-type medicine.

Antibiotics would quickly run out, leading to high rates of infection after surgery, more deaths and an increase in sexually transmitted disease.

Without vaccines New Zealand would see a gradual return of infectious diseases such as polio, tuberculosis, diphtheria and measles. Nor would there be protection against exotic diseases such as cholera or plague which refugees might introduce. More deaths could be expected, particularly among children.

Sufferers of asthma, diabetes and epilepsy would be especially vulnerable as medicines for their chronic conditions ran out. Few drugs would be available for cancer and heart patients, as well as those with psychiatric disorders.

Without painkillers there would be more sufferers among acute and terminally ill people, though New Zealand might eventually be able to produce morphine from opium poppies.

No oral contraceptives and a reduction in supply of barrier contraceptives such as condoms and diaphragms would probably lead to more unwanted pregnancies and abortions.

Lack of dental supplies would make present dental care levels impossible. More toothaches would be experienced and more teeth would need to be extracted — without recourse to painkillers.