

## 1. 被害概要

長崎市及び近隣の町では、1982年7月10日から長雨が続き、すっかり地盤が緩んだところに、23日夜、時間降雨量187ミリという記録的な集中豪雨が襲ったため、河川が氾濫し、山崩れ、がけ崩れが発生して、甚大な被害を蒙った。

人的被害は、死者295人、行方不明4人、負傷者805人に上った。家屋の被害は、全壊584棟、半壊954棟、一部破損1,111棟、床上浸水17,909棟、床下浸水19,197棟に及んだ。物的被害は、商工関係960億円、農林関係843億円、土木関係556億円、家屋関係431億円などとなっており、わずか数時間の豪雨で、総額3,153億円という膨大な額が失われた。

今回の災害の特徴は、死者・行方不明者の約8割が土石流や山崩れによるものであり、洪水や増水など直接水によるものは少なかった。しかし、河川の氾濫により、下流では建物の中まで泥土が堆積し、建物や道路の跡片付け作業は水害後も長く続いた。

## 2. 救援・対策

長崎県をはじめ、国や関係市町村も災害対策本部を設置して被災地の救援にあたるほか、全国からも救援の手が差し伸べられた。

今回の水害で大きな被害が出た原因としては、予想し得ないほど驚異的な集中豪雨であったことと、水害に対するかねてからの心構えが行政にも住民にも十分でなかったことが指摘された。

そこで、県はこの水害の教訓を踏まえ、総合的な防災対策の検討を行うために2つの委員会を設置した。

委員会は、住民サイドでは、的確な避難対策を含めた自主防災組織の確立、行政サイドでは、災害発生時の正確な情報の把握、迅速な状況の判断ができるような情報収集と伝達機能の強化、ハード面では、急傾斜地対策、治水対策などの災害に強い都市づくりの必要性について答申を行い、県は可能なことから順次着手した。



(Nagasaki Prefectural Government)

## 1 Flood and Resulting Damage

In Nagasaki City and neighbouring towns, the rain began on 10 July 1982. The ground was already soft. In the evening of the 23rd, there was record-breaking rain, and the precipitation was 187mm per hour. The area was badly damaged from a flood and landslide.

The death toll was 295, with 4 missing and 805 injured. Damage to houses included 584 completely destroyed, 954 half-destroyed and 1,111 partially destroyed. Houses flooded above the floor level totalled 17,909, and below the floor 19,197. The total damage caused by the heavy rain in several hours amounted to ¥315.3billion ¥96billion's worth to commerce and industry, ¥84.3billion to agriculture and forestry, ¥55.6 billion to engineering, and ¥43.1billion to housing. The characteristics of this disaster were that about 80% of dead or missing was due to landslide or mudflow, with only very few directly killed by flood or increased water levels. Because mud accumulated in buildings and houses in the downstream areas, work to put buildings and roads in order took a great deal of time.

## 2. Relief Activities and Countermeasures

While Nagasaki Prefectural Government, the central government and other concerned municipalities established headquarters to relieve the sufferers in the disaster-hit area, relief activities also reached Nagasaki from all over Japan.

With regard to the cause of the damage, the following reasons were pointed out: It had not been possible to predict such a disastrous storm; neither government nor citizens had been adequately prepared for the flood. After experiencing the disaster, Nagasaki Prefectural Government established two committees to review comprehensive disaster prevention countermeasures. The committees recommended the establishment of self-help disaster prevention organizations as well as to set up countermeasures for refuge; it was also recommended that the government should strengthen its functions to collect and disseminate information, to grasp correct information, and to make correct decisions rapidly, at the actual time of disaster. It was also recommended that the government should prepare the city against natural disasters, including implementation of countermeasures for steeply sloped land and flood control. The government, consequently undertook to provide measures where feasible.



(Nagasaki Prefectural Government)

## バングラデシュ大洪水（1988年）

### 1. 被害概要

1988年6月以降、モンスーンの降雨が強く、ブラマプトラ、ガンジスなどの河川の上流に降り、8月以降、この国は史上最大規模という大洪水に見舞われた。国土の約3/4が水没し、被災者の数は人口の1/3にあたる3,700万人、死者は1,000人以上と言われている。

穀倉地帯の平野が被害を受けているので、GNPがUS\$160といわれるこの国の経済に甚大な打撃を加えることになった。また、首都ダッカ市内に侵入した洪水により、断水、停電等が起き、市民生活に大きな影響がでて、市内の大学も閉鎖されるという状態である。衛生状態が悪化し、伝染病が発生した。

### 2. 救援

赤十字や各国から多くの救援の手が差し伸べられ、被災者の救済にあたった。また、ここでは各方面の協力により、災害通信網や避難シェルターが作られていて、広範囲の災害の割には死者が少なかった。

### 3. 原因と対策

最近、洪水が多くなったことの遠因として、水源流域のヒマラヤ山麓で森林伐採と牧草地化が進み、流域の保水力が失われ、土砂が流出し、バングラデシュ国内で河床の著しい上昇があると言われている。河口に運ばれる土砂は、1年に4億2千万トンと推定されている。

この国の主要部分である沖積平野は、洪水などによる土砂の堆積で形成されたことを考えると、状況は複雑である。そこで、総合的視野に立った、長期対策が望まれる。



(REUTER-SUN)

## THE FLOOD DISASTER IN BANGLADESH (1988)

### 1. Flood and Resulting Damage

Starting in June 1988, heavy monsoon rain continued to fall in the upstream area of the Ganges and the Bramaputra Rivers. From August, Bangladesh was hit by the largest flood in its history. It was reported that three-fourths of the country were swamped and 37 million people, or one-third of the population, suffered and over 1,000 persons were killed by the flood.

The granary plain area in the country was damaged. The Bangladesh economy, whose GNP was estimated at US\$160 per capita, was severely damaged. When the flood flowed into Dacca, the capital of the country, water and power supplies were cut off. Livelihood of the people in the city was badly affected, and some of the universities were closed. Sanitation problems occurred, and epidemics spread throughout the city.

### 2. Relief Activities

The Red Cross, and aid from many countries, contributed to relief and rescue activities in Bangladesh. Although it was a widespread flood, the death toll was relatively small, because emergency telecommunication as well as shelters for refugees were set up with aid from many countries and various organizations.

### 3. Cause and Countermeasures

Indirect causes of the frequent occurrence of floods in recent years are deforestation and increase of pasture in the foothills of the Himalayas, the area around the source of rivers; the rivers lost their capacity to hold water so that the earth and sand have been carried away; the bottoms of rivers have been significantly raised all over the country. It is estimated that 420 million tons of soil have been carried down to the mouth of the river.

Most of the country is alluvial plain, which has been formed with the accumulated soil from floodwaters. Conditions in Bangladesh are, therefore, complex. Comprehensive long-term countermeasures are urgently needed.



(REUTER-SUN)

## 1. 被害概要

超大型のハリケーン・ギルバートは、1988年9月10日大西洋で発生し、カリブ海を西進しながらジャマイカなどカリブ海諸国に大きな被害を与えた。ギルバートは、この地域で今世紀に観測されたハリケーンの中で最も大きなものであった。

9月12日にギルバートの直撃を受けたジャマイカは、最も大きな被害を受けている。死者こそ43人と、ハリケーンの大きさを考えると少なかったといえるが、家屋関係の被害では、その5分の1が残骸となるかひどい打撃を受け、少なくとも50万人が家を失った。ジャマイカ島の被害は、8億米ドル以上と見積られている。

他のカリブ海諸国の被害程度は、ジャマイカよりも少なく済んでいる。セントルシアでは、洪水と地滑りが起きており、道路や橋梁がダメージを受け、バナナ農園の約3%がひどい被害を蒙った。グアドローペとマルチヌクでも同じ様な被害が起きている。

プエルトリコでは2人が死亡し、ドミニカ共和国では死者が8人、3,000人が家を失い、コーヒー、バナナ、綿花の農園やその他の農作物に大きな被害がでたと報じられた。ハイチでは、30人が死んでいる。

メキシコも非常に大きな被害を受けている。特に沿岸の小さな島々は被害が大きく、家屋約23,000戸が崩壊し、道路がふさがれ、数人の死者がでた。北部の州のモンテレー市の近辺では、避難する人々を乗せた4台のバスが、氾濫したサンタカタリナ川の水に吞込まれてしまい、約200人が死亡した。

## 2. 救援

9月14日、国連事務総長は、加盟国に対して、ジャマイカへの援助を求める緊急声明を発表し、国際的な救援がカリブ海諸国やその他の国々から寄せられた。

## 1 Hurricane and Resulting Damage

The giant Hurricane Gilbert, which formed in the Atlantic Ocean on 10 September 1988, left a trail of destruction on a scale never experienced before in Jamaica and other Caribbean countries, as it made its way westward. Gilbert was the most powerful hurricane observed in the region this century.

On 12 September, Gilbert directly struck Jamaica, and caused the heaviest damage in the region. Considering the intensity of the hurricane, the death toll of 43 seems to be small. But it is estimated that one-fifth of all the houses were either wrecked or severely damaged. At least 500,000 people were made homeless. The total damage in the island is estimated to be over US\$800 million.

Other Caribbean countries were affected only slightly less than Jamaica. Flood and landslides occurred in St. Lucia, damaging roads and bridges and destroying about 3% of the banana plantations. Guadeloupe and Martinique suffered similar losses.

It is reported that 2 persons were killed in Puerto Rico, while in the Dominican Republic 8 persons were killed, 3,000 made homeless, and the coffee, banana, and cotton plantations as well as other food crops were severely damaged. On Haiti, the death toll was 30.

More heavy damage occurred in Mexico. The small offshore islands were particularly affected, where the hurricane damaged or destroyed approximately 23,000 homes, blocked roads and caused several deaths. In Monterrey in the northeast of Mexico, four buses carrying evacuees were washed into the floodwaters of the Santa Catarina River. It is estimated that nearly 200 people were killed in this single accident.

## 2 Relief Activities

On 14 September, the Secretary General of the United Nations made an emergency statement requesting assistance from its member nations in relief activities in Jamaica. All nations, including Caribbean countries contributed to the relief activities in Jamaica.



(REUTER-SUN)



(REUTER-SUN)