

CONFERENCE DE PRESSE

**de S.E.M. Vladimir SENKO
Ambassadeur Extraordinaire et Plénipotentiaire
de la République de Bélarus en France**

sur le thème

La République de Bélarus : 15 ans après la catastrophe de Tchernobyl

le jeudi 19 avril 2001 à 18 heures

Au CAPE - Maison de Radio France –

116, Avenue du Président Kennedy, 75116 PARIS

Table de matières

- L'article « Les conséquences de Tchernobyl en République de Bélarus » par M. Vladimir TSALKO, Président du Comité d'Etat du Bélarus sur les conséquences de la catastrophe nucléaire de Tchernobyl, publié dans la « Gazette nucléaire » (1^{er} trimestre de 2001).
- Carte de la contamination du territoire du Bélarus par radionucléides en 2001.
- Résolution 54/97 de l'Assemblée générale de l'ONU « Renforcement de la coopération internationale et coordination des efforts déployés pour étudier et atténuer le plus possible les conséquences de la catastrophe de Tchernobyl ».
- Le message du Directeur général de l'UNESCO M. Koichiro MATSUURA à la communauté internationale à l'occasion du 15^{ème} anniversaire de la catastrophe de Tchernobyl.
- Rapport du Bureau des Nations Unies pour les Affaires Humanitaires intitulé « Chernobyl. A Continuing Catastrophe » (en anglais).
- Brochure coéditée par le Bureau des Nations Unies pour les Affaires Humanitaires et la Fédération Internationale de la Croix Rouge intitulée « Chernobyl : a Chronic Disaster » (en anglais).

10-15

16-24

p. 2 et 4

II- Les conséquences de Tchernobyl en République de Bélarus

Vladimir Tsalko,

Président du Comité sur les conséquences de la catastrophe à la centrale nucléaire de Tchernobyl de la République de Bélarus.

La république de Bélarus, une des ex-républiques de l'URSS, a acquis son indépendance en 1991. Sa population est 10 millions d'habitants, sa superficie -207 600 km². Elle est limitrophe avec la Lituanie, la Lettonie, la Pologne, l'Ukraine et la Russie.

La communauté internationale connaît parfaitement la date de la catastrophe de Tchernobyl -le 26 avril 1986-. Mais en fait peu de gens connaissent le vrai impact de cet accident sur des millions d'habitants des trois pays slaves : le Bélarus, l'Ukraine et la Russie. Il est difficile de surmonter le stéréotype : comme cette catastrophe s'était produite dans la ville ukrainienne de Tchernobyl, donc c'est uniquement ce pays qui en a souffert le plus. En réalité, la plus grande partie du nuage radioactif s'est dirigée vers le Bélarus ayant aussi touché par une de ses ailes la Russie et par l'autre - un certain nombre de pays européens.

Notre pays a reçu le choc principal de la catastrophe, 23% du territoire du Bélarus a été contaminé par les radionucléides de longue durée, 70% des déchets radioactifs ont pénétré le sol bélarussien pour des décennies à venir.

Un habitant sur cinq est affecté, soit plus de 2 millions de personnes. Une grande quantité des terres (2 640 km²) et plus d'un quart des massifs forestiers sont exclus de l'exploitation.

Selon les calculs scientifiques, le préjudice économique porté à notre pays par cet accident est équivalent à 32 budgets annuels du Bélarus de l'année 1986, soit 235 milliards de dollars américains nécessaires pour en surmonter les conséquences pendant une période de 30 ans.

Mais revenons en 1986.

Jusqu'en 1991, la lutte contre les premières suites de la catastrophe, l'évacuation des habitants de la zone de 30 km, leur déménagement dans les régions propres du Bélarus, la prise des mesures de première urgence, la définition des normes et niveaux admissibles de la contamination radioactive ainsi que beaucoup d'autres sujets étaient décidés par les dirigeants de l'URSS.

Les moyens nécessaires ont été alloués du budget de l'Union composée de 15 républiques. Après la dissolution de l'Union Soviétique, la République de Bélarus s'est retrouvée seule face au fardeau des conséquences de la catastrophe. Au cours des premières années après cet accident le Bélarus consacrait aux problèmes de Tchernobyl, jusqu'à 25% de son budget. Actuellement ce chiffre est un peu inférieur.

En 1988 les Nations Unies ont reconnu le caractère planétaire des conséquences de Tchernobyl en tant que catastrophe écologique radioactive globale, ayant concentré son attention sur les problèmes les plus aigus de la population qui a souffert suite à cette catastrophe considérée comme une tragédie humanitaire internationale de longue portée.

La protection et les soins des victimes de cette catastrophe étant une des principales fonctions de l'État, les autorités du Bélarus ont appuyé l'initiative de lancement d'un programme spécial de liquidation des conséquences de la catastrophe de Tchernobyl.

Vu l'échelle de la contamination et le fait que plus de trois mille villes et villages se trouvent en zone de risque radiolo-

gique, force est de constater le manque énorme de moyens pour la mise en oeuvre de tout l'éventail des mesures nécessaires à minimiser l'impact de l'irradiation sur la population et l'environnement du Bélarus. Et pourtant, les autorités de la République de Bélarus n'ont pas abandonné leurs citoyens et, 14 ans après cette tragédie, prêtent beaucoup d'attention à la situation dans les régions affectées et aux gens qui y habitent.

En conformité avec le programme de minimisation des conséquences de la catastrophe de Tchernobyl, tout un nombre de mesures d'urgence et de longue portée sont déjà réalisées, d'autres sont en train d'être mises en place. 135 mille personnes ont été déménagées dans les régions propres. De nouvelles habitations et infrastructures ont été construites par l'État pour les personnes déménagées. 5 mille citoyens bélarussiens ont encore droit au déménagement et l'État leur garantit ce droit.

Les efforts de déménagement signifient non seulement des dépenses matérielles considérables, mais aussi la nécessité d'accorder de l'aide psychologique, car il faut expliquer aux gens le danger provenant d'un ennemi invisible et non palpable, il faut chercher et trouver des mots pour persuader les gens de quitter leurs lieux d'habitation traditionnelle et ceux de leurs ancêtres sans parler de la nature magnifique du sud du Bélarus.

Actuellement, plus de 1,5 millions de personnes habitent dans la zone de contamination radioactive. Et nous disons avec douleur que 437 mille d'entre elles sont des enfants.

Chaque année l'État bélarussien dépense plus de 50% du budget consacré aux conséquences de Tchernobyl pour la mise en oeuvre des mesures de réhabilitation pour les enfants. Malgré le manque constant de ressources, l'État réalise des programmes spéciaux pour enfants dont le programme présidentiel "Enfants de Bélarus" qui inclut le sous-programme spécial "Enfants de Tchernobyl".

La loi sur la protection sociale des citoyens affectés par la catastrophe à la centrale nucléaire de Tchernobyl prévoit la remise en forme des enfants affectés, deux fois par an, dans les centres pour la réhabilitation et remise en forme se situant dans les territoires propres. La nutrition gratuite des enfants par des aliments propres est organisée dans les établissements préscolaires et scolaires. Les examens médicaux et traitements gratuits se font chaque année. L'attention importante est accordée à l'élaboration des programmes et manuels éducatifs spéciaux destinés à développer chez les enfants la nouvelle culture écologique. Nous travaillons pour apprendre aux enfants les habitudes pratiques de comportement dans les conditions de risque continu à leur santé.

Les enfants et la jeunesse ayant appris la culture de vivre dans les territoires contaminés sauront gérer les risques et éviter les dangers pour leur santé. Dans ce sens notre pays a encore un grand travail à accomplir qui doit être mené d'une façon systématique et basé sur les données scientifiques.

Malheureusement, l'État bélarussien ne dispose pas de moyens suffisants pour résoudre les problèmes liés aux conséquences de Tchernobyl dans tous les domaines de l'économie. Et pourtant la spécificité de la contamination radioactive est qu'aucun pays du monde n'est capable de les surmonter pendant une courte période du temps. C'est pour cette raison que nous devons unir nos efforts pour liquider les conséquences de la catastrophe de Tchernobyl. En aidant le Bélarus, la communauté internationale va mieux comprendre la nature réelle de l'atome, son utilité et son mal, élaborer les moyens de protection et les transmettre aux populations. Le problème de Tchernobyl doit être hors de la politique parce que la radiation ne connaît pas les frontières et ne respecte pas les conditions des conventions internationales.



Assemblée générale

Distr.
GÉNÉRALE

A/RES/54/97
28 janvier 2000

Cinquante-quatrième session
Point 20, c, de l'ordre du jour

RÉSOLUTION ADOPTÉE PAR L'ASSEMBLÉE GÉNÉRALE

[sans renvoi à une grande commission (A/54/L.22/Rev.1 et Add.1)]

54/97. Renforcement de la coopération internationale et coordination des efforts déployés pour étudier et atténuer le plus possible les conséquences de la catastrophe de Tchernobyl

L'Assemblée générale,

Réaffirmant ses résolutions 45/190 du 21 décembre 1990, 46/150 du 18 décembre 1991, 47/165 du 18 décembre 1992, 48/206 du 21 décembre 1993, 50/134 du 20 décembre 1995 et 52/172 du 16 décembre 1997, et prenant note des décisions adoptées par les organes, organismes et programmes des Nations Unies en application de ces résolutions,

Rappelant les résolutions du Conseil économique et social 1990/50 du 13 juillet 1990, 1991/51 du 26 juillet 1991 et 1992/38 du 30 juillet 1992, ainsi que la décision 1993/232 du Conseil, en date du 22 juillet 1993,

Notant avec satisfaction la contribution apportée par des États et des organismes des Nations Unies au développement de la coopération en vue d'atténuer le plus possible les conséquences de la catastrophe de Tchernobyl, les activités menées par des organismes régionaux et autres, en particulier la Commission des communautés européennes, ainsi que les activités bilatérales et celles d'organisations non gouvernementales,

Se félicitant que, dans le Programme relatif à la poursuite de la mise en œuvre d'Action 21¹, les États Membres aient pris l'engagement d'intensifier leurs activités de coopération relatives, entre autres, à la

¹ Résolution S-19/2, annexe.

prévention et à l'atténuation des grandes catastrophes technologiques et autres catastrophes qui ont des effets néfastes pour l'environnement, aux secours en cas de catastrophe et à l'aide au relèvement, afin de permettre aux pays touchés de mieux faire face aux situations de cette nature, et se félicitant des engagements souscrits en réponse à l'appel lancé par le Secrétaire général à l'occasion du dixième anniversaire de l'accident de la centrale nucléaire de Tchernobyl,

Consciente de la persistance des effets à long terme de la catastrophe de la centrale nucléaire de Tchernobyl, qui a été un accident technologique majeur par son ampleur et a entraîné des conséquences et problèmes humanitaires, environnementaux, sociaux, économiques et sanitaires par lesquels chacun est concerné et auxquels on ne saurait remédier sans une coopération internationale large et active et sans que l'action menée dans ce domaine soit coordonnée aux niveaux international et national,

Soulignant qu'il incombe au premier chef aux gouvernements des pays touchés de faciliter les activités visant à atténuer les conséquences humanitaires de la catastrophe de Tchernobyl, notamment les efforts déployés par les organisations non gouvernementales pour apporter une aide humanitaire,

Se déclarant profondément préoccupée par les nouvelles manifestations des répercussions de la catastrophe de Tchernobyl sur la vie et la santé des populations, en particulier des enfants, dans les zones touchées du Bélarus, de la Fédération de Russie et de l'Ukraine, ainsi que d'autres pays touchés par la catastrophe,

Prenant en considération les constatations et les résultats de la visite du Secrétaire général adjoint aux affaires humanitaires qui s'est rendu en octobre 1998 dans les zones touchées du Bélarus, de la Fédération de Russie et de l'Ukraine,

Prenant acte du rapport du Secrétaire général sur l'application de la résolution 52/172²,

Notant que l'Ukraine est disposée en principe à fermer la centrale nucléaire de Tchernobyl avant la fin de 2000, conformément au memorandum d'accord entre les gouvernements des pays membres du Groupe des Sept, la Commission des communautés européennes et le Gouvernement ukrainien concernant la fermeture de la centrale, et ayant à l'esprit l'appui déjà apporté à cette fin par un certain nombre de pays et d'organisations internationales ainsi que la nécessité d'un appui supplémentaire de la part des pays et organisations internationales concernés,

1. *Prie* le Secrétaire général de continuer de s'employer à donner suite à ses résolutions sur la question et de maintenir, au moyen des mécanismes de coordination existants et en particulier par l'intermédiaire du Coordonnateur des Nations Unies pour la coopération internationale pour Tchernobyl, une étroite coopération avec les organismes des Nations Unies, ainsi qu'avec les organismes régionaux et autres organismes intéressés, en vue d'encourager les échanges réguliers d'information, la coopération et la coordination des efforts multilatéraux et bilatéraux menés dans ces domaines, tout en exécutant des programmes et projets précis, notamment dans le cadre des accords et arrangements pertinents;

² A/54/449.

2. *Invite* les États, en particulier les pays donateurs, les institutions financières multilatérales intéressées et tous les autres éléments concernés de la communauté internationale, y compris les organisations non gouvernementales, à continuer d'apporter leur soutien au Bélarus, à la Fédération de Russie et à l'Ukraine dans l'action que mènent ces pays pour atténuer les conséquences de la catastrophe de Tchernobyl et à accorder une attention particulière à l'Appel des Nations Unies pour la coopération internationale pour Tchernobyl, lancé en avril 1999;

3. *Souligne* qu'il importe que les autorités des pays touchés facilitent la tâche des organisations humanitaires, notamment les organisations non gouvernementales, qui s'emploient à atténuer les conséquences humanitaires de la catastrophe de Tchernobyl, en coopérant pleinement avec elles et en secondant leurs efforts, note les mesures déjà prises à cet égard par les gouvernements des pays touchés et engage ceux-ci à prendre encore d'autres dispositions pour simplifier les procédures internes qui entrent en jeu et à trouver des moyens d'améliorer l'efficacité de leurs mécanismes permettant d'exempter de droits de douane et autres droits les marchandises fournies gracieusement au titre de l'assistance humanitaire par des organisations humanitaires, notamment des organisations non gouvernementales;

4. *Se félicite* de l'action menée par l'Organisation des Nations Unies, avec la coopération des Gouvernements du Bélarus, de la Fédération de Russie et de l'Ukraine, pour promouvoir le Programme interorganisations d'assistance internationale aux zones touchées par l'accident de Tchernobyl;

5. *Se félicite également* de la convocation par l'Organisation des Nations Unies d'une série de réunions internationales spécialement consacrées à Tchernobyl, en vue de mobiliser un appui supplémentaire en faveur des populations du Bélarus, de la Fédération de Russie et de l'Ukraine touchées par la catastrophe de la centrale nucléaire de Tchernobyl, et exhorte la communauté internationale et les gouvernements des pays touchés à continuer de contribuer à la mise en œuvre des projets visés par le programme interorganisations susmentionné;

6. *Exprime sa gratitude* pour les contributions versées pour le financement du plan visant à assurer la protection de l'environnement au moyen du sarcophage qui recouvre ce qui reste du réacteur détruit de la centrale de Tchernobyl, et sollicite des contributions supplémentaires à ce plan;

7. *Se félicite* que les chefs d'État et de gouvernement des sept pays les plus industrialisés et l'Union européenne, réunis à Cologne (Allemagne) en juin 1999, aient décidé d'aider à faire en sorte que le plan susmentionné continue d'être financé et que les travaux entrepris se poursuivent, et, à cet égard, accueille avec satisfaction la convocation de la conférence pour les annonces de contributions qui se tiendra en Allemagne en mai 2000;

8. *Prend note avec satisfaction* des activités du Centre international pour Tchernobyl³, créé en Ukraine avec la participation active du Bélarus et de la Fédération de Russie, qui renforce sensiblement les moyens dont la communauté internationale dispose pour étudier et atténuer le plus possible les conséquences de pareils accidents, et invite toutes les parties intéressées à prendre part aux activités de ce centre;

³ Nouvelle appellation du Centre scientifique et technique international pour l'étude des accidents nucléaires et radiologiques.

9. *Prie instamment* le Coordonnateur des Nations Unies pour la coopération internationale pour Tchernobyl de continuer de renforcer la coopération internationale en vue de surmonter les conséquences sanitaires, sociales, économiques et écologiques de la catastrophe de Tchernobyl dans les zones les plus touchées du Bélarus, de la Fédération de Russie et de l'Ukraine, dans le cadre du Programme interorganisations d'assistance internationale aux zones touchées par l'accident de Tchernobyl;

10. *Demande* au Secrétaire général de continuer d'échanger régulièrement des informations avec les pays concernés, ainsi qu'avec les organes et organismes compétents des Nations Unies, en vue de sensibiliser l'opinion publique mondiale aux conséquences des catastrophes de cette nature;

11. *Prie* le Secrétaire général de lui soumettre à sa cinquante-sixième session, au titre d'une question subsidiaire distincte de son ordre du jour, un rapport où il présentera un bilan détaillé de la suite qui aura été donnée à la présente résolution et des idées de mesures novatrices à prendre pour que l'action menée par la communauté internationale pour faire face à la catastrophe de Tchernobyl soit aussi efficace que possible.

73^e séance plénière
8 décembre 1999

Message du Directeur général de l'UNESCO
à l'occasion du quinzième anniversaire de la catastrophe de Tchernobyl

Quinze ans ont passé depuis le jour de l'accident survenu dans la centrale nucléaire de Tchernobyl, l'une des plus grandes catastrophes provoquées par l'homme qu'ait connu le XX^e siècle. Depuis quinze ans, les conséquences biologiques, sociales et économiques de cette tragédie sont considérables pour les populations vivant dans les territoires contaminés par les déchets nucléaires. La mobilisation des gouvernements et de la population des pays affectés n'a jamais faibli. Il a fallu reloger les habitants des territoires contaminés, faire le nécessaire pour diminuer les effets destructeurs de la contamination nucléaire, réorganiser le système de protection de santé et établir de nouvelles règles de comportement et d'organisation des activités économiques en vue d'assurer la sécurité des populations concernées.

Les conséquences de la catastrophe influenceront encore longtemps sur le destin de millions de gens. Et la fermeture définitive de la centrale de Tchernobyl le 15 décembre dernier ne signe pas la fin du problème.

La mobilisation de la communauté internationale a permis de minimiser les conséquences de cette catastrophe. L'UNESCO a été l'une des premières organisations du système des Nations Unies à répondre à l'appel des pays directement affectés. Les activités menées dans le cadre du Programme UNESCO-Tchernobyl se sont élevées à plus de 10 millions de dollars. Les dix centres de réhabilitation psychologique et sociale créés dans ce cadre au Bélarus, en Russie et en Ukraine apportent, aujourd'hui encore, une aide précieuse à la population.

L'UNESCO, relayée par diverses commissions nationales, a contribué à consolider les efforts — tant publics que privés — de nombreux pays dans leur lutte contre les conséquences de la catastrophe de Tchernobyl. L'immense vague de solidarité qu'elle a générée dans le monde entier a aussi fait de Tchernobyl un symbole d'éthique et de coopération internationale.

La « culture de prévention » doit s'imposer de manière urgente dans un monde interdépendant où la sécurité de tous dépend tout à la fois de la confiance, de la solidarité et du sens des responsabilités de chacun. La communauté internationale se doit de développer une culture de solidarité et de renforcer les mécanismes de prévention : la sécurité de l'humanité tout entière en dépend.

Saisissons l'occasion de cet anniversaire funeste pour s'engager à renforcer nos efforts afin que le nom de Tchernobyl ne soit pas seulement associé à une grande tragédie, mais soit aussi le symbole d'une nouvelle solidarité planétaire.

90. [Signature]

CHERNOBYL A CONTINUING CATASTROPHE

FOREWORD

The word "Chernobyl" recalls an event—the explosion of a nuclear reactor—which happened in April 1986, opening a Pandora's box of invisible enemies and nameless anxieties in people's minds, but which most of us probably now think of as safely relegated to the past.

Yet there are two compelling reasons why this tragedy must not be forgotten.

First, we should not forget Chernobyl because otherwise we increase the risk of more such technological and environmental disasters in the future. Alas, errors of this kind cannot be remedied. But their recurrence can be prevented.

Secondly, more than seven million of our fellow human beings do not have the luxury of forgetting. They are still suffering, every day, as a result of what happened fourteen years ago. Indeed, the legacy of Chernobyl will be with us, and with our descendants, for generations to come.

This booklet illustrates the health, economic, environmental, psychological and social effects of the catastrophe, and the heroic but desperate efforts at rehabilitation made by local communities. It depicts a gloomy situation where the victims often feel unwanted, without the means to recover and sustain themselves.

In 1997 the United Nations launched a Chernobyl humanitarian projects could, if implemented, make a vital difference to the lives of many people. Indeed they may fairly be described as the minimum the international community should do, not only for the victims of Chernobyl themselves but also to ensure that future generations throughout the world can learn some lessons, and reap some benefits, from their ordeal. I appeal to Governments and to institutions—both intergovernmental and non-governmental—to give these projects their most serious and urgent consideration.

I also appeal to the international community as a whole to rethink its response to nuclear accidents, bearing in mind our humanitarian obligation to help those whose lives have been shattered or disrupted, as well as the prudential need to prevent future catastrophes. The exact number of victims may never be known. Not until 2016, at the earliest, will we know the full number of those likely to develop serious medical conditions. The most vulnerable victims were, in fact, young children or babies unborn at the moment when the reactor exploded. Their adulthood—now fast approaching—is likely to be blighted by that moment, as their childhood has been. Many will die prematurely. Are we to let them live, and die, believing the world indifferent to their plight?

Kofi A. Annan Secretary-General of the United Nations

INTRODUCTION

Most people think of the nuclear accident at Chernobyl as an event that has been consigned to history, but the truth is that the accident continues to have a devastating impact on the populations of three countries. In fact, although more than thirteen years have passed since the event, the worst effects on the health of the people affected may well be yet to come. While the explosive stories of the meltdown and clouds of radiation have long since faded from the headlines, the real human, economic, social, health and environmental catastrophe has only just begun. The government of Belarus spend a large proportion of its national budgets on alleviating human suffering caused by the accident, but in the current economic climate it is not nearly enough. Much work has been done to set relief projects in motion, but unfortunately in the tide of emergencies now facing the international community, Chernobyl has been largely forgotten and only a fraction of the required external resources has been mobilized. This booklet aims to turn the spotlight back on Chernobyl and remind people how much the victims of this tragic accident still need their help.

WHAT HAPPENED

Forty seconds after 0123 hours on 26 April 1986 during a safety experiment at the Chernobyl Nuclear Power Plant an operator pressed a button. Owing to a design fault, the reactor went into meltdown and released a cloud of radiation that spread across the entire Northern Hemisphere. Over the next few weeks, the operator lay dying in hospital alongside his colleagues, his radiation-tanned skin turning darker each day until it was completely charred. Over and over again, he asked himself what had gone wrong. Whatever conclusion he reached, he could never have understood the full magnitude of the catastrophe, the consequences of which would continue to devastate the region for decades. An area of 155,000 sq.km home to 7.1 million people including more than 3 million children, was contaminated with

hazardous levels of radiation. At least 100 times as much radiation was released by this accident as by the two atomic bombs dropped on Hiroshima and Nagasaki combined.

Reactor number 4 was completely destroyed by explosions that blew the roof off the reactor building. Three people were killed in the explosion itself. One body remained inside the reactor, too highly contaminated to be moved. Of the first emergency workers to arrive on the scene, 134 were diagnosed with acute radiation syndrome. Of these, 28 died within the first three months.

THE GENERAL SITUATION

Approximately 70 per cent of the radioactive fallout descended on Belarus, making it the worst contaminated of all the affected countries. Twenty per cent of its forests are still contaminated and cultivation of 6,000 sq.km of agricultural land has been ruled out by law. Nine per cent of all government expenditure is channeled into mitigation of the direct consequences of the Chernobyl disaster and 109,000 people have been resettled. Nearly 2 million people, including 0,5 million children, were directly affected by the accident. As a result of the economic crisis, the Belarusian Government manages to make available only a part of the money originally planned for Chernobyl relief.

EVACUATION AND RESETTLEMENT

Thousands of people still live in areas with high levels of contamination. Resettlement on this scale is a massive operation that continues to be a tremendous economic burden. Whole new towns have had to be built, ready for immediate occupation. This upheaval has placed an enormous strain on people's lives. Building a new town is not as simple as putting up a few tower blocks; whole communities must be reconstructed complete with all the necessary services, institutions, jobs, hospitals and so on. Functioning communities are organic and complex, so it is not surprising that when a new community is created from scratch, it does not always run smoothly. The local economies of the new settlements have to be subsidized by the national governments and there are high levels of unemployment.

HEALTH EFFECTS

It is 14 years since the accident, and yet the worst may still come. So far the biggest threat to health has been thyroid cancer. During the accident, there are emissions of radioactive iodine, which affects the thyroid and can lead to thyroid cancer as well as other thyroid disorders. Radioactive iodine has a short half-life and so decays quickly, ceasing to contaminate the region. However, it takes some time for thyroid cancer to develop, and the people most vulnerable are those who were young children or babies unborn at the time of the accident.

The number of people with thyroid cancer began to increase about five years after the accident. This number continues to rise. In some areas the incidence is over a hundred times higher than before the accident. Scientists originally predicted that the incidence would not peak until 2006, and it was expected that the figure would eventually reach 6,600, but recently the number of cases has exceeded expectations. Over 3,000 cases of thyroid cancer have already been reported.

The World Health Organization's International Thyroid Project has found evidence suggesting that even relatively low levels of radiation exposure may result in underactive thyroid syndrome, also known as hypothyroidism. Hypothyroidism can have the following effects: in new-borns, severe mental and growth retardation; in children it can cause dwarfism; and in adults it can cause lethargy, cold intolerance, weight gain, swelling of hands and feet, increased menstrual flow, infertility and depressed heart function.

Evidence is also coming to light suggesting that lung, heart and kidney problems can also be traced to radiation released from Chernobyl.

The health impact of the disaster is not restricted to the direct effects of radiation exposure. The contamination of agricultural land has practically nullified agricultural production, and this has had a severe nutritional impact on the population. According to EMERCOM (the Ministry of Emergencies), 80 per cent of the population of Belarus have health problems ranging from vitamin deficiencies to thyroid cancers. 1

LONG-TERM HEALTH EFFECTS

Very little is known about the long-term health effects of exposure to radiation because it is a relatively new phenomenon, and the full consequences may not be apparent for a very long time.

11

Statistics show that, so far, thyroid cancer is the primary form of cancer which can be directly linked with Chernobyl, but most other cancers would not start to show up for at least 10 years after the accident, and might well take 15-20 years to materialize. When other types of cancer do materialize, it will be difficult to prove that they were caused by radiation exposure, because medical science is not yet able to differentiate between cancers resulting from exposure to radiation and cancers resulting from other causes.

Recent studies have shown that some people, who were children at the time of the disaster, have developed rogue antibodies which fail to recognize the body's own tissue and attack it as though it were a foreign infection. In this case, the antibodies are said to be attacking the thyroid, and this may lead to hypothyroidism. Young people from two villages were tested. One of these villages was heavily contaminated, while the other escaped with negligible contamination. No significant difference in thyroid function was found, but the young people from the contaminated village were five times more likely to have developed anti-thyroid gland antibodies than their counterparts.

There is some controversy about the findings of the various research projects addressing the environmental and health effects of Chernobyl, but the one thing that emerges crystal clear is the importance of continuing medical research. There are several reasons why this research is vital for the people living in the affected areas. Firstly, better understanding of the health effects of radiation exposure is essential for accurate diagnosis, and appropriate treatment. Secondly, and perhaps equally important, the better the understanding of the health effects, the easier it is to provide convincing reassurance to the residents of the affected area, whose health has suffered enormously from the psychological effects of living with contamination. Another good case for extensive medical research is the sad fact that it will very likely prove vital for the victims of future nuclear accidents. Aside from this, terrible though it may sound, it is also a unique opportunity for medical research, which may bear all sorts of unexpected fruit.

PSYCHOLOGICAL AND SOCIAL EFFECTS

Radioactive contamination is an invisible aura. The meadows around Chernobyl are teeming with wildlife. The rivers team with fish that have been allowed to grow unhooked to over ten feet long. At first glance it could be the Garden of Eden, for radiation is not only invisible, it cloaks itself in nature. Around Chernobyl, nature is protected from man by contamination. But you can feel that something is horribly wrong. Radiation has an evil aura, which is partly physical and partly perceived, but both are equally real. The physical aspect is the irradiated particles which release energy in the process of decay, which can damage living tissue. The perceived aspect is the feeling of being surrounded by an invisible danger that we know can harm us but that we do not understand. This feeling is shared by more than seven million people and is as harmful as the physical effects of radiation exposure.

One of the most important factors pertaining to the psychosocial effects of the accident on the affected population is the quality of public information. The Soviet Union has left these people with a deep mistrust of the authorities. In Chernobyl itself, information about the seriousness of the accident was withheld for weeks, while children played outdoors exposing themselves to radiation. In the town of Pripyat, just a mile or so from the reactor, 36 hours passed before residents were told that there was any sort of danger. A teacher took her class of small children out onto the bridge to watch the distant firemen as they struggled to control the chaos at the leaking reactor. Those children have all developed thyroid carcinomas.

Not surprisingly, people in the region have very little faith in public information, particularly information about their own safety. People do not trust radiation safety labels on food products; they do not trust any home produce; they do not trust the authorities. Even people in very mildly contaminated areas who are not at risk from radiation-related health problems, believe that they are in danger, and live in fear. Every illness and abnormality is blamed on Chernobyl, and people are often afraid to have children. Women who have moved away from the Chernobyl region often try to keep their former home a secret for fear that men will not wish to marry them. Limited knowledge of the long-term effects of exposure to radiation, along with a general distrust of public information and the inevitable rumors of hideous ailments and genetic mutants, have induced psychological trauma and prolonged panic in the hearts and minds of millions of people.

ECONOMIC EFFECTS

Apart from the obvious enormous cost of emergency relief and relocation, the accident has also taken a massive toll on the region's ability to create wealth. The region which once provided food for people throughout the Soviet Union, is now reduced to importing everything. No one claims that if it were not for Chernobyl the area would be an economic miracle, but it is undeniable that the disaster has had a devastating impact on the economy. Today, even safe food products grown in the area are virtually impossible to sell because nobody trusts that they are safe. The affected region also includes an immense area of forest, which is now contaminated. Timber was once a sort of hard currency in this region, but it, too, is now impossible to sell. These difficulties leave the various governments with massive and ever-increasing trade deficits, and consequently fewer and fewer funds for the huge clean-up and resettlement projects.

ENVIRONMENTAL EFFECTS

A total area of 155,000 sq. km is still contaminated with the dangerous radioactive isotopes caesium 137 and strontium 90, which have long radioactive half-lives and will continue to threaten the environment throughout most of the next century. The affected area consists of vast forests and prime agricultural land. More than 200 thousand hectares of forest are contaminated. The forests and farmland together constituted the livelihood of the people. They are now effectively barren. As well as cultivated crops, wild food sources are also contaminated—berries, mushrooms, fish and game are all a threat to life. As radio-nuclides slowly penetrate the soil they filter down into the water-table and poison the rivers and lakes. The threat of radioactive pollution looms over the rivers, which are the water supply for thousands of people.

PERSISTING DANGERS OF FURTHER RADIOACTIVE CONTAMINATION

Even in areas where clean-up operations have been successful, or where people have been satisfactorily resettled, this is not the end of the story, as there are still a number of ways in which recontamination might occur.

FLOODING

If the plain on which the Chernobyl Nuclear Power Plant stands were to flood, radio-nuclides settled in the topsoil could be washed into the Pripyat River and Dnieper reservoirs, the main water supply for millions of people.

CONTAMINATED WASTE DUMPS

Wherever clean-up operations have been mounted, there are burial sites for contaminated waste. These are not always as deep or as safe as they should be, and need to be very carefully monitored. There is a real danger that radioactive particles could be washed down into the ground-water and thus contaminate rivers and water supplies.

CONTAMINATED FORESTS AND FOREST FIRES

Dangerous levels of radioactive contamination have been measured in huge areas of forest land. One major cause for concern is the risk of forest fires, which would send clouds of smoke carrying radioactive material into the atmosphere, leaving us once again at the mercy of the winds.

WHY WE MUST HELP

The Chernobyl nuclear disaster has caused suffering and hardship on an enormous scale. But when people look at the facts for the first time the number of people who have died, the absence of any compelling evidence of genetic deformities, their initial reaction is often to think that after all it is not as bad as they originally thought. All too rarely have the media drawn sufficient attention to the scale and complexity of the consequences of this one industrial accident. An ugly stain has spread over a big chunk of the world. The psychological and social impact on the population and the toll that it has taken on the various economies is immeasurable. This area might have stood a good chance of emerging from the ashes of the Soviet Union as a progressive and optimistic society, but Chernobyl has destroyed that chance. The inhabitants of this area are still struggling to rebuild their lives.

The best reason for helping these people is that they are so easy to help. They are the first ones to help themselves. Their education level is one of the highest in the world, there are many well qualified people, and the infrastructure is intact. The relief projects detailed below have all been meticulously worked out by the United Nations Inter-Agency Task Force on Chernobyl and the benefits are instantly visible and measurable. In every project at every stage of the process, all the money would remain under the direct control of the international organizations.

The international community has already done a great deal to help in this region, and it is crucial that support should continue so as not to waste any of the previous good work. With support, this part of the world would stand a good chance of getting back on track towards health and prosperity. The Chernobyl Trust Fund, established by the United Nations and administered by OCHA, is not a bottomless pit, it is an investment that will pay off.

ECONOMIC REHABILITATION

If, on 25 April 1986, one could have foreseen the break-up of the Soviet Union, the region that would have looked the most promising in terms of its economic future would have been Belarus. Now this country must import everything. There are two ways in which aid can be of direct assistance. The first is to lessen the financial burden of the governments concerned by funds, organizational and structural assistance and expertise needed for carrying out urgent health and safety measures. The second is to help it restructure its economy so as to minimize the economic impact of the disaster. One way in which relief organizations are tackling this problem is by exploring alternative uses for contaminated agricultural land, for instance by producing industrial crops such as bio-fuels. All of the other proposed

relief projects will boost the morale of the affected population, and improved morale leads to improved growth.

PSYCHOSOCIAL REHABILITATION CENTERS

Psychosocial problems are much more difficult to treat than physical health problems. However, there are now 3 United Nations community-based rehabilitation centers in operation which do help. The rehabilitation centers provide basic information about minimizing the health risks associated with radiation. This is very important because people are often ignorant of how to take the most simple and effective precautions. People in the area have a great deal more confidence in information coming from international organizations than information provided by their own governments. The centers are clearly labeled with the United Nations insignia, and they are proving very effective in establishing confidence in public information. Other services provided by the centers include sports facilities, medical health care and kindergartens. The centers now play a central role in the community, and help to fill the gap left by the closure of all the former Soviet institutions. However, the local governments have not been able to continue supporting the centers, and many staff have not been paid for months.

THE LIQUIDATORS

Altogether more than 200,000 Belarusian people participated in the clean-up operation. They received individual doses of radiation across the whole spectrum. 12 died slow painful deaths within three months of the accident; thousands have suffered from long-term health problems. Robots were used to remove bits of reactor fuel that had been blown onto the roofs of both the turbine and Reactor Number 3. But the robots could not cope with the enormous levels of radiation and broke down. Soviet authorities decided that the best policy was to get young conscript to remove the debris by hand. The conscripts were not fully aware of the dangers involved and received massive doses of radiation. Survival among them jokingly refer to themselves as "bio-robots". The liquidators who are not yet invalids live their lives as though they were carrying a biological ticking bomb. They pay dearly for their efforts, and certainly deserve international support.

SUPPORT FOR CHERNOBYL VICTIMS WILL SAVE PEOPLE FROM FUTURE DISASTERS

The recent accident at the Tokaimura reprocessing plant in Japan has shown us that serious nuclear accidents can also happen in highly developed countries. There is an enormous amount to be learned from Chernobyl about preventing future nuclear accidents, and coping with them effectively when they happen. As Tokaimura has shown us, the sad fact is that others will need this knowledge at some stage in the future. It is vital to the world, and not only the afflicted population of Belarus that we give the Chernobyl humanitarian programme our strongest support.

DEVELOPMENT AND HUMANITARIAN RELIEF

One of the problems faced when trying to raise money from the donor community for the people affected by Chernobyl, is that this disaster does not fit neatly into any of the usual categories for international aid, and so falls between the aid budgets allocated for development and those allocated for humanitarian relief. The Chernobyl cause qualifies for, and is in desperate need of, both humanitarian relief and money for development projects. Many of the proposed relief projects work on two levels, providing humanitarian aid and initiating development, which is why they are such an effective and easy way to help the sufferers. Aid for Chernobyl should be viewed as both humanitarian relief and a contribution towards development rather than neither.

COORDINATION OF THE INTERNATIONAL EFFORT

The United Nations Under-Secretary-General for Humanitarian Affairs and the Head of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) is acting as United Nations Coordinator of International Cooperation and his Geneva office serves as a channel for donor contributions. A dedicated "Chernobyl Trust Fund" has been created for the express purpose of receiving and administering these funds. This mandate was assigned to OCHA by a series of General Assembly resolutions concerning the International Cooperation on Chernobyl, adopted between 1990 and 1999.

PRIORITY PROJECTS

Modernization of the Bragin Hospital, Gomel Region Project code: Health/BEL 03/97

Executing Agency: WHO

This hospital serves around 20,000 people in one of the worst affected areas. It is in dire need of refurbishment, and is currently unable to comply with sanitary norms. It is also unable to fulfil its tasks because it does not have the necessary equipment. It is particularly in need of X-ray equipment, mobile ultrasound equipment, equipment for anaesthesia, determination of electrolytes in blood and reanimation, a coagulometer and a haematological analyser.

The national authorities will bear the enormous staff and refurbishment costs, but further international assistance amounting to US\$ 2 million is urgently required. The project would take three years and would be executed in cooperation with WHO.

A Network of Rehabilitation Centres for Children in Belarus [Project code: Socio-Psych/BEL 08/97, Annex I - Executing Agency: UNDP]

Many children in Belarus suffering from thyroid cancer or other radiation-related illnesses do not receive any sort of social support. This project aims to make their lives worth living by providing them with a network of rehabilitation centres with educational and sports equipment, and medical psychosocial rehabilitation facilities.

So far three rehabilitation centres are already in operation and another two are under construction, but because of the lack of financial resources, the necessary equipment running the centres has not been supplied.

The national authorities have pledged US\$ 216,140 for construction work and US\$ 1.5 million per year to meet operational running costs. A further external contribution of US\$ 600,000 is urgently required to cover the costs of equipment and personnel training.

Decontamination and Radio-Ecological Rehabilitation of Specific Areas in the Gomel Region
[Project code: Env/BEL 09/97, Annex I Executing Agency: UNDP]

More than 70 per cent of the Gomel region was contaminated. It is an absolute priority that kindergartens, schools, hospitals and other essential sites be decontaminated so as to reduce doses of external exposure. In spite of the fact that this work has been going on for six years, there is still much to be done.

Special small-sized equipment and protective clothing are urgently needed, as well as training for personnel. The national authorities will supply the personnel and funds for maintenance of the equipment, but US\$ 400,000 is desperately needed from external sources for equipment and training.

CONCLUDING REMARKS

The radiological conditions in the area immediately surrounding the plant have largely improved, thanks to the international commitment to improved safety at Chernobyl, which allowed for the construction and now reinforcement of the sarcophagus. However, the human consequences of the accident continue to be relentlessly harsh. Donor States, multilateral institutions, private foundations and NGOs are urged once again to support the highly prioritized projects listed above. All contributions to the United Nations Chernobyl Trust Fund will be acknowledged in writing and donors will be provided with the financial and narrative reports concerning use of these funds. These projects represent the absolute minimum effort required to reduce the human suffering that these people endure.

The contributions to the United Nations Chernobyl Trust Fund can be made to the following bank account:
Bank's name: \ address:

Account's name:

Account number:

Reference:

UBS S.A. Case Postale 2770 CH-1211 Geneva 2, Switzerland UN General Fund GO-590160.0

OCHA/Chernobyl/Donation for Belarus

For more information please contact:

UN Office for the Coordination of Humanitarian Affairs (OCHA) Disaster Response Branch (DRB) - Palais des Nations CH-1211 Geneva 10, Switzerland

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CHERNOBYL: A CHRONIC DISASTER

At 01:23:40 on 26 April 1986, as winter edged slowly into spring, an alarmed nuclear power plant operator in what is today northern Ukraine reached for an emergency shutdown button. He was too late. In a few seconds, power surged and the heat in reactor no. 4 of the Chernobyl nuclear power plant skyrocketed to 2000°C. Engineers had been testing the RBMK-1000 - the type of reactor used at Chernobyl - at low power. It failed the test and two explosions blew off its metal seal, releasing an estimated 150-200 million curies of radioactivity into the air - at least 100 times the combined impact of the bombs dropped on Hiroshima and Nagasaki, or as much as a medium-sized nuclear bomb. Some 155,000 square kilometers, an area home of over 7 million people, were contaminated. Chernobyl had become the world's largest nuclear catastrophe.

A deadly mixture floated across the northern hemispheres skies. The most threatening source of radioactivity immediately after the accident was iodine-131, which has a half-life of eight days and is at the root of much of the thyroid cancer triggered by Chernobyl. Next was caesium-137, which will take another 300 years to disappear. Caesium has crept into food chains and could be concentrated in wild food such as mushrooms and berries. Strontium-90, which will be decomposing until 2266 and could affect bone marrow, ranks third. Perhaps least understood and therefore most alarming is plutonium-239, the most toxic of Chernobyl's wastes, which will be around for 244,000 years and is believed to produce lung cancer when inhaled as a dust.

ABANDONED IN NEED

Nearly a decade and a half later, Chernobyl has fallen off the media radar screen - but a huge caseload of needs remain. Radioactive materials have wreaked havoc not only on the bodies of those exposed, but on their minds. Most people expected physical ailments to develop in Chernobyl's wake. Few expected that psychological trauma would affect literally millions still living in the shadow of contamination. Economic and institutional crisis have wracked the region since the former Soviet Union dissolved, making the burden immeasurably worse.

Scientists are still debating the causal connections between radioactive isotopes and the birth defects and cancers widely reported in the affected region - and this will improve our understanding and response when the next nuclear disaster strikes. But immediate humanitarian needs are being largely overlooked. Vladimir Tsalko, chairman of the Chernobyl consequences committee of the Belarus Ministry of Emergency Situations, claimed recently that no adequate medical supervision was being provided for about 2 million people affected by the accident, including 500,000 children. Inside many of these children, thyroid cancers may be slowly growing unnoticed. Rates will not peak for another five years - and without systematic screening and treatment, such cancers can be fatal.

Those who suffered the worst exposure came to be known as 'liquidators' - the 600,000 plus soldiers and civilians who cleaned up the Chernobyl site over several years. Out of these, the most exposed were the 50,000 who worked on top of the reactor to bring the fire under control and build the sarcophagus which now entombs it. "They were supposed to stay on the roof to fight the fire for only 90 seconds then be replaced," said Jean-Pierre Revel, senior health officer at the International Federation of Red Cross and Red Crescent Societies. "One can easily guess this did not happen."

Their radiation doses varied. Some 200,000 liquidators were irradiated with about 100 millisieverts (mSv), five times the limit for nuclear plant workers in one year; 20,000 received 250 mSv; and dozens suffered a potentially lethal dose of several thousand millisieverts. In total, 237 liquidators were admitted to hospital, of whom up to 187 developed acute radiation syndrome. Thirty-one died as a direct consequence of the accident and at least 14 more died over the next ten years. The evacuees were the second most-affected group - 400,000 people were relocated, up to 135,000 of them from within the Zona, the 30-km radius exclusion zone surrounding the power plant. Under 10 per cent of adults registered at 70 millisieverts, and nearly 5 per cent received more than 100 mSv - equivalent to having more than 1,000 chest x-rays.

That millions of people were put at risk by Chernobyl is undeniable. What is harder to ascertain is just how badly their health was damaged by the accident, since it happened just as the Soviet Union was beginning to crumble. It has become difficult to distinguish whether illness is caused by radiation, or from poor health due to the region's economic and social collapse.

A LINK ESTABLISHED

The challenge of medicine has been to find direct links between illness and the accident at Chernobyl. Since the mid-1990s, thyroid cancer is the only disease visibly traceable to the accident. Before Chernobyl blew up Belarus registered 0.5 to 1 cases of thyroid cancer annually in every million people. After the accident, in some areas the figure shot up 100-fold. Children were hurt the most, some receiving radiation doses in their thyroid glands as high as 10,000 mSv.

Belarus, which caught two-thirds of the fallout, recorded only eight thyroid cancer cases in children under 15 from 1974 to 1985. But between 1986 and 1999, 664 cases were identified, according to the World Health Organization (WHO). In early 1999, Igor Zelenkevitch, Belarusian health minister, stated that the incidence of thyroid cancer among the children of contaminated areas was 24 times higher than in other parts of the country.

Skyrocketing thyroid cancer rates should come as no surprise. The region around Chernobyl has traditionally suffered from an iodine deficiency, so children's bodies were quick to absorb the runaway iodine-131. The most vulnerable were embryos and children under four at the time of the accident, who together make up 42 per cent of thyroid cancer cases. They were contaminated

2

through milk passed on by cows grazing on contaminated grass. Contamination was compounded by the initial scarcity of uncontaminated food and inadequate stocks of iodine tablets for prevention. Had raw milk consumption been halted immediately after the accident and iodine tablets distributed as a preventive measure, thyroid cancer rates would probably have been much lower.

When thyroid cancer first appeared around Chernobyl in 1991, the radiological community was highly skeptical of its link to the accident. Iodine-131 was thought to be low in carcinogenic potential, so assistance to hard-hit populations came slowly. Yet thyroid cancer in children is relatively uncommon so its rapid increase should at least have raised an alarm. Today, it most certainly would.

Thyroid cancer can usually be caught in time but diagnosis is expensive and money becoming harder to raise. "If you detect it early and treat it, you have a 95 per cent chance of success. The enemy is time. If you detect it too late, a child can die," said Pierre Pellerin, a leading authority on radiation and Chernobyl, during an International Federation fact-finding tour of the area. Much of the work undertaken by the International Federation and national Red Cross societies in the Chernobyl area has dealt with screening and treating children and adults for thyroid cancer.

THYROID GLAND CANCER: WHO CARES?

Nearly a decade and a half after the world's worst nuclear accident, thyroid cancer cases among the people of Belarus are still rising. Yet despite such evidence, the legacy of secrecy from 50 years continues to throw long shadows. Many Belarusians refuse to believe anything the authorities say - some would rather remain ignorant of their contaminated condition than face the consequences.

Mogilyov is one of Belarus's biggest cities, in a region covered by the International Federation's Chernobyl Humanitarian Assistance and Rehabilitation Programme (CHARP). The city itself is relatively 'clean', but all is not what it seems.

"It is the unexpected that always happens, says Valery, 47-year old factory worker, who was one of many manual labourers checked by the Belarus Red Cross diagnostic laboratory in February 1999. "Before, I didn't believe it could happen to me, he added. "It's been 13 years since the accident in Chernobyl and I thought it was already too late to worry about anything. So when the MDL came to our factory, I had my doubts. 'Is it worthwhile to have a check-up?' I asked myself. Well, it costs nothing. When the doctors showed Valery a picture of his thyroid gland taken by the scanner, he could not believe it. Even to his untrained eye it was clear he had a serious problem. A month later, Valery was operated on in Minsk, and his cancerous thyroid gland surgically removed. He now has to take the drug levo-thyroxine for the rest of his life, otherwise he could die of organ or immune system failure. But as Valery admits, he is one of the lucky ones: "I live in a big city and could get an examination. What about people living in remote areas who have almost no chance of knowing about their real health situation? The only chance is the Red Cross.

According to Arthur Grigorovich, head of one of the mobile lab teams: living conditions have generally been deteriorating in recent years - especially for people in the rural areas. When you can hardly afford to buy food," he adds, "even a bus ticket to the nearest city is too expensive. People who don't feel sick don't spend money on 'transportation for a medical check-up.

After the operation, Valery returned to his factory and suggested to his colleagues that they have a check-up too. "I knew that only a part of the 800 people working at my factory decided to be examined, so I said them: Doesn't my situation speak for itself?

It is still too early to tell whether thyroid cancer will be the only cancer to increase significantly as a result of Chernobyl. The same goes for leukaemia, which scientists have been trying to link to Chernobyl for years. After all, leukaemia was the first cancer to appear at Hiroshima and Nagasaki. Looking for it here makes sense.

IN HIROSHIMA'S FOOTSTEPS

The leukaemia trail is confused. One study carried out in 1996 by a team of Belarusian doctors found that leukaemia rates among registered liquidators who spent more than 30 days in the 30-km zone were four times higher than the national average. But state registration of Belarusian liquidators only began in 1990-91, by which time some could already have died of acute leukaemia.

In other nuclear incidents, such as at the Sellafield Plant in Great Britain, excess leukaemias were reported for radiation doses equal to or higher than 500 mSv. But fewer than 5 per cent of adults resettled from the Chernobyl area received more than 100 mSv of radiation, so the low overall numbers of leukaemia cases should not come as a shock. In Hiroshima and Nagasaki, the number of new leukaemia cases peaked five to ten years after the explosion so, if leukaemia hasn't increased by now, experts say, the chances are it won't anymore.

Still, efforts continue to try to establish the link. According to Arthur Michalek, dean of the graduate division of the Roswell Park Cancer Institute, "We expected to find and have found increased levels of cancer of the thyroid... We do not know what other cancers may result, but we may look at bone, breast and testicular cancer and infertility issues in this region in the future.

HORRIFYING EXPECTATIONS?

In addition to leukaemia, a growing number of studies are trying to establish solid links between Chernobyl and increases in other cancers, congenital abnormalities, problem pregnancies and other radiation-induced diseases. But this is difficult, as they remain inconclusive and uncorroborated.

One controversial study which re-analysed the Chernobyl data found that children's malformations - cleft palate, Down's syndrome and deformed limbs and organs - had increased 83 per cent in areas heavily contaminated by Chernobyl, 30 per cent in mildly contaminated areas, and 24 per cent in 'clean' areas. Another study found immune system damage in young people from Belarus who, as children or unborn babies, were exposed to radioactive iodine from Chernobyl.

In the Gomel region of Belarus, the hardest hit by Chernobyl, cancers in children have gone up by more than 60 per cent, blood diseases by 54 per cent, digestive organ diseases by 85 per cent, and psychological disorders have doubled since the accident. Some evidence coming to light also suggests that lung, heart and kidney problems are also linked to radiation from Chernobyl.

While solid scientific evidence is weak, anecdotal indications of other Chernobyl-related diseases are widespread. According to Vladimir Chernousenko, a former member of the Ukraine Academy of Sciences, there is hardly a child in Ukraine today who is not suffer from some immune deficiency disease, whether cardiovascular, lymphoid or oncological. In the Ukraine's three largest provinces, a 1989 medical investigation indicated that the health of every second resident was damaged. In the most contaminated provinces, the incidence of immune deficiency diseases has doubled or tripled since 1985. However disputed the increase, the possibility of further congenital malformations (CM) - such as harelip, cleft palate and polydactylism - among newborn children of Chernobyl survivors should not be dismissed.

At the same time, scientists continue to investigate the possible impacts of Chernobyl liquidators. They were, after all, the closest to the source. One survey found they suffered from fatigue, apathy and a drop in the number of their white blood cells. A number of other studies in Sweden and Finland are ongoing but are so far not conclusive. Research by Ukrainian and Israeli scientists suggests that one in three liquidators suffers from sexual or reproductive disorders, and that the number of pregnancies with complications has been on the rise.

For scientists, the basic question remains: are these developments directly traceable to Chernobyl or is the erosion of the health system to blame? But some of those in the humanitarian community find such debates a sidetrack. "We are not interested in proving the connection between radioactive fallout and congenital malformation," said the International Federation of Red Cross and Red Crescent Societies. "We are interested in the humanitarian impact." And that impact may be even more invisible than the causal connections scientists seek.

RED CROSS VOLUNTEERS KEY TO PSYCHOSOCIAL RECOVERY

Irina lives in Gomel, Belarus, on the doorstep of the forbidden zone. But she only heard about the Chernobyl accident days after it happened. Rumours about possible health effects were circulating, but it took years before she realized the effects. Short of cash, her main worry is her young son's health as she can hardly provide him enough food. A schoolmate's thyroid gland was recently removed when cancer was diagnosed - he now has to take drugs for the rest of his life. Irina's secret fear is that the same fate will befall her son.

Recently, she attended a Red Cross training programme for psychosocial support - the first time ever she could share her anxiety with others the same age. She discovered they had the same concerns, the same fears and the same ignorance about what exactly happened. Several participants burst into tears, but were assured this was normal and that there was nothing and nobody to blame. Irina left feeling very relieved and convinced of the importance of such sessions. She is now actively involved, providing advice, helping and counselling those who, like her, seek a free from fear.

Widespread anxiety was reported soon after the disaster among those living in contaminated areas. But due to a shortage of resources, it was only in February 1997 that the Red Cross initiated a psychosocial programme. Its aim is to help people resolve their anxieties and thereby restore their ability to take control of their lives again. Several thousand local people have attended lectures which provide simple, reliable and easily understandable information on radioactivity. Its causes and health consequences. Some are counselled by telephone and many more are reached through newspaper articles, radio programmes and TV interviews.

Unlike most humanitarian programmes, psychosocial support does not involve highly visible relief distributions. Relying on person-to-person relationships, it may take some time before results are noticed, as better understanding slowly leads to improved quality of life. Since emotions expressed are so culturally specific, local facilitators volunteering for the Red Cross are involved from the needs-assessment stage onwards. And close cooperation with mental health professionals is critical both for training and supervising the volunteers, and to ensure the referral of more traumatized survivors to specialist care.

AN UNEXPECTED SCOURGE

Imagine a nuclear accident near your home. Then turn on the radio or TV only to find near-silence. Imagine breathing the air and gazing anxiously at the horizon, not knowing whether your lungs are pumping oxygen or poison. And imagine being bundled onto a bus and carted away to a distant city. For hundreds of thousands of people, that's exactly what happened at Chernobyl.

Radioactive rain fell for three months following the accident, while children played in the streets. Yet some villages were only told they had been contaminated more than two and a half years after the event. Official silence surrounded the accident, breeding an attitude of distrust. Although, according to the International Atomic Energy Agency (IAEA), the Soviet authorities acted as well as they could under the circumstances, the lack of communication with victims only made things worse. At the time the Soviet government argued that providing information would lead to mass panic. Yet withholding it eventually caused even more damage.

Silence and stonewalling were accompanied by official apathy. In the West, campaigns, political drives and lobbying for

4

post-Chernobyl safety arose even though the accident was distant. But in the stultified Soviet Union, people had been trained to follow instructions and ask no questions. So they didn't.

"In our street," said one witness, "I went up to a vendor and told her to stop selling her sausages, as radioactive rain was falling. But she just said: 'Be off, you drunkard! If there'd been an accident they'd have announced it on radio and TV!'"

Displacement and lack of information fueled what is perhaps the greatest long-term health impact to emerge from the accident: psychological trauma. In contaminated areas, up to 90 per cent of people thought they had, or might have, an illness due to radiation exposure. In 'clean' settlements the figure was 75 per cent. Throughout the region, people feared they might die or at least become very ill.

And as people worried about their health and survival, their world crumbled. In the 'old days', people - pensioners, veterans and liquidators - knew life was hard in the Soviet Union, but anxiety was not part of their daily experience. The State would take care of them. Suddenly everyone had to fight for survival, but with inadequate tools. No one in the Soviet Union had been trained for survival as individuals.

The partition of the Soviet Union into independent republics in 1991 shocked people who lost a lifetime of familiar references. The cradle-to-grave guarantees of the hammer and sickle had suddenly become obsolete, replaced by the unfamiliar trappings of a free market system. Political change brought few benefits for the victims of Chernobyl, just more hardship for those less and less able to cope. "What will our future be?" they asked.

According to Pellerin, as many as 3 million people may be suffering from chronic stress disorders as a result of Chernobyl. One researcher claims children evacuated from the reactor zone have suffered a 10- to 15-fold increase in neuropsychiatric disorders. As for adult victims of mental trauma, he compares their state to that suffered by veterans of wars in Viet Nam and Afghanistan.

Two groups were most affected. Topping the list were the liquidators, who included soldiers from throughout the Soviet Union. For the first few days they fought the fire, then they cleared away the debris and finally they built the 'sarcophagus', the concrete casing which protects Chernobyl's radioactive leftovers. In the first few years after the accident they were compensated. Today, their payments - US\$ 3 a month in the Ukraine, or the cost of ten loaves of bread - can no longer keep pace with inflation. They call it 'coffin money'.

The other group most affected by psychological stress was the local population. Thirty-six hours after fire broke out at the plant, all 45,000 inhabitants in the neighbouring town of Pripyat were taken away. In the following days, another 20,000 were moved from within the Zona and nearby villages. Eventually, some 400,000 would be forced to leave their homes, and over 4 million, three-quarters of them children, would continue to live in areas with some contamination. A staggering 7.1 million would eventually require some kind of special health care.

The elderly suffered doubly. Memories of being forced from home by the Nazi invasion in 1941 came flooding back. Some, returning to their contaminated villages, preferring empty houses on deserted streets to foreign suburbs in distant cities, perhaps acting out a desire not to be shifted anymore.

Misunderstanding the stress factors and perhaps in an effort to disclaim complaints, some scientists initially branded the public reaction 'radiophobia', a term no longer in use. This alienated people even further, implying their reactions were irrational or abnormal. Yet there was nothing abnormal about reacting negatively to what was the world's worst nuclear accident, which in turn forced a complete disruption of social and family networks, traditional ways of life, and for some, permanent uprooting from home.

Today, that mistrust remains. Having been betrayed already, people in the contaminated areas no longer believe what they are told - including assurances that the food they eat is as safe as the labels say. Often, they are afraid to have children. This distrust, combined with our continuing ignorance about radioactivity's effects, makes it easy for rumours about genetic mutations to spread, prolonging panic among millions of people.

LAND OF EMPTY

First their bodies. Then their minds. And on top of that, Chernobyl poisoned the very land which fed them. In the most radioactive areas, the people were moved. But nearly half a million remained in areas still considered contaminated.

Much of the land is barren and some of it downright dangerous. The heart of contamination lies within the Zona, whose 30-km radius encompasses nearly 3,000 square km of land. Officially it is devoid of all human activity - but some people never left. They continue to use the forests. They cut timber to build homes, hunt and fish for game, and pick mushrooms and berries. They are never far from danger. Equally alarming is the influx of refugees from Chechnya and other parts of the former USSR, arriving in their hundreds, looking for subsistence in the belief that invisible threats must surely be better than a bullet wound.

The lands contamination will reach far into the region's future. In Belarus, the poisoning of farmland has all but shut down agricultural production, severely undermining human nutrition. Some 20 per cent of forests are still contaminated and 6,000 square km of arable land lie disused. Onto a land of food scarcity, land scarcity has been imposed.

Contamination also killed trees, polluted water and drenched the earth with toxic substances. Some trees next to the plant, in what is called the 'red forest', were so irradiated they had to be destroyed as radioactive waste. Should contaminated forests catch fire, clouds of smoke carrying radioactive materials could waft far beyond national borders.

With the water-table at risk, drinking water remains dangerous and monitoring will be needed for a long time. Authorities are keeping an eye on floods, and planning huge works to keep the contaminated Pripjat River from overflowing into the Dnieper

River in the Ukraine, which supplies water to 35 million people. Flooding could also wash contamination from waste dumps into groundwater, further contaminating rivers and drinking water.

A land which could have provided plentiful food and shelter for transitional nations struggling to emerge from behind the Iron Curtain has been soiled and mortgaged, some of it stripped of life forever.

INTERNATIONAL ASSISTANCE PROGRAMMES FOR CHERNOBYL

The International Federation's Chernobyl Humanitarian Assistance and Rehabilitation Programme which began in 1990, may be the oldest programme operating in Chernobyl, but the United Nations is also extensively involved:

- the UN Industrial Development Organization assists in economic rehabilitation and modernization of enterprises; and
- the UN's Office for the Coordination of Humanitarian Affairs administers the UN Chernobyl Trust Fund and is involved in research and training.

- WHO helps diagnose thyroid cancer in children and provides health care to liquidators;
- FAO removes strontium-90 and caesium-137 from milk with magnetic separation technique;
- IAEA rehabilitates waste-disposal sites;
- UNESCO oversees social-psychological centres;
- UNICEF provides iodized salt to people living near Chernobyl;
- the UN Development Programme studies soil and water for contamination;
- the International Labour Organization helps workers laid off and retrained because of gradual plant closure;

Non-UN groups are just as active:

the European Union has extensive programmes in nuclear emergency preparedness, nuclear safety and radiation protection;

- the G7 through the EBRD is raising funds to seal the sarcophagus and help find alternative sources of energy; and
- the World Bank runs technical and economic rehabilitation programmes in energy development

The US government has allocated US\$ 550 million since 1991 for the safety of east European reactors.

SCIENTIFIC SQUABBLING

Action on Chernobyl has been hamstrung by disputes over numbers and proofs. One of the most disputed figures is Chernobyl's death toll, which some observers call absurdly low. Vladimir Chernousenko, for example, pegs the figure at between 7,000 and 10,000 volunteers dead from high-intensity exposure right after the accident.

Future or potential deaths are also in dispute. According to some scientists in the former Soviet Union, an additional 30,000 to 40,000 deaths from cancers can be expected over the next 70 years. For many Western experts, on the other hand, these figures are extremely overestimated. Scientists do not even agree on who was hurt by what. With the exception of iodine-131, of which people were acutely exposed, some scientists argue that the radionuclides released by Chernobyl have added little to our natural radiation exposure.

In the end, most people who pronounced opinions on Chernobyl at the time got it wrong. The optimists believed the Chernobyl issue would simply evaporate, while the pessimists expected massive deaths, unspeakable mutations and blankets of unbreathable, irradiated air. "Everyone was taken by surprise, the optimists as well as the pessimists," concluded the International Federations Reveal.

But disputes about numbers and predictions should not stand in the way of action - there are enough tangible facts to warrant immediate response. Outside the moribund reactor, tens of thousands of tons of contaminated materials have been stored in some 800 hastily-built sites dotted around the exclusion zone - partly buried in trenches, partly sealed in containers isolated from groundwater by clay or concrete screens, and often, simply stored above ground. The potential hazards posed by these time bombs remain to be addressed.

The sarcophagus, a towering mass of 300,000 tons of concrete covered with 50,000 tonnes of steel plates, is leaking.

Its walls were actually designed to be permeable in order to air-cool the melted reactor. But the roof is cracked and the metal which supports it is corroding. Rain and snow can get inside. If it were ever to collapse, large amounts of radioactive dust would probably be released.

Dealing with these leftover radioactive wastes is one of the highest priorities among those involved in Chernobyl cleanup. Through the European Bank for Reconstruction and Development (EBRD), G7 nations have already raised US\$ 450 million of the US\$ 1 billion needed to seal the sarcophagus and find alternative sources of energy.

Science is being applied to making life liveable in a post-Chernobyl world. Experiments are attempting to remove caesium-137 from food or trying to keep it from entering the soil. And after succeeding in removing it from water, another experiment is trying to remove it from milk. Some relatively simple, inexpensive and successful agricultural measures are being tested:

deep ploughing of surface contaminated soils; adding fertilizers or other chemicals to agricultural lands; changes in crop types; shifting feeding regimes and slaughtering times of cattle; using impregnated 'Prussian Blue' salt licks to limit the transfer of caesium to cattle; and relocating animals to uncontaminated pastures.

Even some institutional advances have emerged out of the disaster. Chernobyl's transboundary nature spawned global efforts to further cooperation in understanding and dealing with emergencies. A number of treaties were improved or elaborated,

6

including international agreements on early notification and assistance in case of a radiological accident by the IAEA and the European Community; an international nuclear emergency exercises programme by the OECDs Nuclear Energy Agency (NEA); an international accident severity scale by the IAEA and NEA; and an international agreement on food contamination by the Food and Agriculture Organization (FAO) and WHO.

OUTSTANDING NEEDS

But beyond the immediate technical fixes lies a plethora of humanitarian needs. Some, though not all, are being addressed, mostly through international aid. CHARP, the Chernobyl Humanitarian Assistance and Rehabilitation Programme, is the International Federations approach to helping Chernobyl victims. When it started in 1990, CHARP screened food supplies for contamination but, as the radiation situation stabilized, its work spread to diagnosis and screening of local inhabitants. Today, the programme provides extensive assistance for up to 4 million Belarusians, Ukrainians and Russians living in contaminated areas, to help them overcome radiation-related stress. Six mobile labs focus on children or on those who were children at the time of the accident, screening for thyroid cancer and accumulated radioactivity in the body. But it would need 20 such labs to do the job properly.

The ongoing nature of the Chernobyl disaster demands that humanitarian assistance develop into a long-term programme, yet efforts remain hamstrung by insufficient funds from short-term aid budgets. CHARP is slated to continue working around Chernobyl until 2006, but officials wonder whether this is realistic. In a statement to the plenary of the 54th United Nations (UN) General Assembly in November 1999, the International Federations permanent representative to the UN said: "There is a real danger that our involvement will have to be discontinued." There is little money available and what there is goes on the technical fix, not the humanitarian need. Only a fraction of aid appeals for Chernobyl are funded. Yet humanitarian needs - principally psychosocial counselling, food monitoring and mobile screening labs - could be covered until 2006 with less than 5 per cent of the total budget being sought by the G7 for technical work.

Nor can the cash-strapped economies of the former Soviet Union resolve things on their own. Belarus is already spending more than 5 per cent of its annual budget dealing with the fallout from Chernobyl, and has introduced a special income tax of 12 per cent to raise the necessary revenue. It provides benefits to Chernobyl survivors - free housing to people officially recognized as suffering from the catastrophe, including 500,000 children. Belarus and the Russian Federation are struggling to help. But with a third of all CIS' people living on less than a dollar a day, funding requests for Chernobyl's survivors must compete with other pressing priorities.

The accident's own invisibility defies attempts to focus attention. Some effects were tangible, such as thyroid cancer. But much of the accident's health impact lies in its psychological repercussions. Mobilizing action and money is difficult enough for visible disasters. Doing so for immeasurable damage from unseen particles is harder still. As international aid budgets continue to shrink and donors move on to the next emergency, the hundreds of thousands of Chernobyl survivors are in severe danger of being forgotten. Keeping Chernobyl on the agenda of donors will remain a challenge for the foreseeable future.

NEXT TIME?

The threat of more nuclear accidents looms large at the 60 or so Soviet-designed reactors currently operating in the newly independent states and central and eastern Europe. Fifteen of them are RBMK reactors as at Chernobyl, and some will never reach international safety standards. Is this really the right time to scale back assistance?

FLAWS AT TOKAI-MURA LOOK FAMILIAR

A blue flash on 30 September 1999 heralded Japan's worst ever nuclear accident. In a nuclear facility at Tokai-mura, some 90 km north of Tokyo, three workers bypassed normal procedures and poured seven times too much uranium oxide into a steel tank. The ensuing chain-reaction or criticality released enormous amounts of energy in the form of neutron and gamma radiation. The micronuclear reactor they had created took some 20 hours to bring under control, by which time hundreds of people, both workers and members of the public, had been contaminated with dangerously high levels of radioactivity.

Almost immediately, the worker closest to the steel tank collapsed and began vomiting. Having received lethal doses of radiation, he died three months later, despite exhaustive medical attention. While the emergency services began removing the workers from the accident scene within ten minutes, they were not immediately informed about the high levels of radioactivity. Consequently they too received dangerous doses of radiation.

Are there any lessons to be learned from Japan's accident which reinforce those learned from Chernobyl? Technically, the two accidents greatly differed - Tokai-mura is a nuclear fuel-processing facility, not a nuclear power station. But, as at Chernobyl, inherent dangers of nuclear technology, combined with human error, weak regulations and poor public information exacerbated the human tragedy dealt by Tokai-mura.

Poor safety guidelines for handling medium-enriched uranium were further weakened by the operating company. Workers were poorly trained and unaware of the potentially explosive materials they were handling. Worse still, Tokai-mura had received

inadequate official onsite inspection in the past which could have uncovered such shortcomings.

The consequences of the accident were aggravated by a slow emergency response in the critical first hours when radioactive emissions were at their highest, it was over seven hours before neutron radiation measurements were taken at the perimeter of the site, confirming that the criticality was still under way. And given that neutron radiation travelled at least 2 km, the 350-metre exclusion zone was inadequate,

Health checks were initially restricted to external body examinations, even though radiation received was deep-penetrating gamma and neutron doses, causing only limited external contamination. But it is possible to take simple blood salt measurements within the first few hours which would have given reasonably accurate readings of actual radiation doses.

As at Chernobyl, lack of accurate and timely public information unnecessarily endangered local people. Many remained unaware of the accident or the need to evacuate an area around the plant (located in a semi-residential area). The evacuation zone itself was poorly policed with many people passing within 100 metres of the building when radiation readings were still high. After the criticality was stopped the following day, emergency workers received significant gamma radiation doses while building protective concrete and aluminium fluoride walls. And the decision to allow people back into the exclusion zone was made while radiation remained at least five times above background levels.

Initial government claims that no members of the public received a radiation dose proved inaccurate. By February 2000, the authorities had acknowledged that 439 people were affected, some receiving more than 100 times the maximum recommended annual radiation exposure. Long-term health monitoring, initially not considered necessary, is now likely.

Japan operates 52 large-scale nuclear reactors, as well as hundreds of nuclear-related facilities. New safety and emergency regulations rapidly passed by the Japanese government, while welcome in principle, will not significantly reduce the risk of further serious accidents in Japan.

HOPE DENIED?

It happened in an instant, but Chernobyl's effects will survive far longer than we will. No longer an emergency, it is worse - a chronic disaster, a rehabilitation problem that has dragged on so long it has exhausted donors. In a sound-bite world of short attention spans and media-driven impatience, sustaining donor interest takes more than mere need or urgency. It takes instant, vivid video, and Chernobyl has little to offer in terms of exciting footage. The accident is old, at times too old to be remembered by the young journalists who cover such things. Their attention shifts quickly - to earthquakes in Turkey, to floods in South Asia.

Yet ongoing work at Chernobyl is essential and, if anything, response should be strengthened, not diluted. Waiting for all the scientists to agree may cost lives. Uncertainty should not be used as a cover for inaction. Chernobyl remains a desperate situation, where millions are still suffering - whether physically, psychologically or economically. Add to the woes of forced displacement and invisible diseases the additional burden of post-Soviet economic and institutional collapse - and the case for strengthening humanitarian action is compelling.

If some have relegated Chernobyl to the slag heap of history along with the Soviet Union, the truth is that the catastrophe continues to devastate the populations of three countries a decade and a half after it happened. In fact, the worst may be yet to come. If we have learned one health lesson from Hiroshima and Nagasaki, it is that cancers caused by radiation can take many years to detect. Thyroid cancers, for example, are expected to peak around 2005 - and will continue to appear until those who were children in 1986 grow old.

Chernobyl still has lessons to teach both nuclear industries and humanitarian agencies. "The expertise we are gaining in how to deal with the aftermath of nuclear accidents is unique," said the International Federations desk officer for the region. Chernobyl is an ongoing public health disaster for those living in its shadow. But it is also an opportunity for richer nations - not just to learn how to avoid future mistakes, but to lend a helping hand to millions of people on whom flawed technology and fractured politics have inflicted decades of continuous suffering.

Chernobyl forced authorities and experts around the world to radically review their approach to radiation protection and nuclear emergency issues. Many countries established nationwide emergency plans in addition to existing local ones, and Chernobyl gave new impetus to nuclear safety research. The accident renewed efforts to expand knowledge on the harmful effects of radiation and its medical treatment, and led to soul-searching on the issue of public information. Chernobyl has already taught us many things - but we still have more to learn.

Given its horrifying impacts, known and not yet known, can anything be done to prevent future Chernobyls? And if there are no guarantees, can we at least ensure that if they do happen, their effects are not as catastrophic?

In retrospect, the walls of institutional silence which surrounded the Chernobyl catastrophe caused unnecessary levels of radioactive contamination and psychological trauma. If people had been better informed and moved more quickly during those crucial first few days, radiation doses might have been lower, the crisis less lengthy. Silence intensified peoples fears about their health and especially that of their children.

Fourteen years later, officials remain uncomfortable with transparency and efforts to obtain information are still clouded in controversy and confusion. It is perhaps unreasonable to expect major changes in attitude. After all, many of those making decisions today are the same ones who made them on 26 April 1986. But greater openness could yield numerous benefits - it could encourage even greater technology sharing between East and West, modernization, better preparedness and training, improved early warning and response mechanisms. It could also help comfort the millions who still live in Chernobyl's shadow.

Humanitarian agencies were slow to reach the disaster zone. In truth, few had experience of nuclear disasters - while many were trying to deal with the fallout from famine in the Horn of Africa. Nor was it part of the mindset of the Soviet Union in 1986 to call in international support. The first international team to visit the disaster zone arrived two years after the accident. And while local Red Cross branches distributed relief goods early on, it was not until January 1990 that the International Federation made the first humanitarian assessment of the situation. The role of humanitarian agencies, a dedicated radiation response team, and rapid evacuation measures could all form part of a government plan to deal with future nuclear emergencies.

Greater preparedness would dearly alleviate suffering. New evidence suggests some thyroid cancers can be prevented if potassium iodide tablets are distributed within three hours of the accident. Dilwyn Williams runs a thyroid cancer research unit attached to Cambridge University: "One of the major lessons we have learned is the extreme sensitivity of the youngest children... They should have done more to make sure potassium iodide was available." The use of preventive iodine is now widespread in Western countries with nuclear facilities.

Key to avoiding future accidents would be an increase in vigilance and upgrading the safety of installations, with regular rehearsals and evaluations of mistakes made. One would have hoped that Chernobyl had instilled a culture of greater caution into the nuclear industry. Yet repeated accidents - even in countries that have experienced nuclear catastrophe before, such as Japan - show this has not happened.

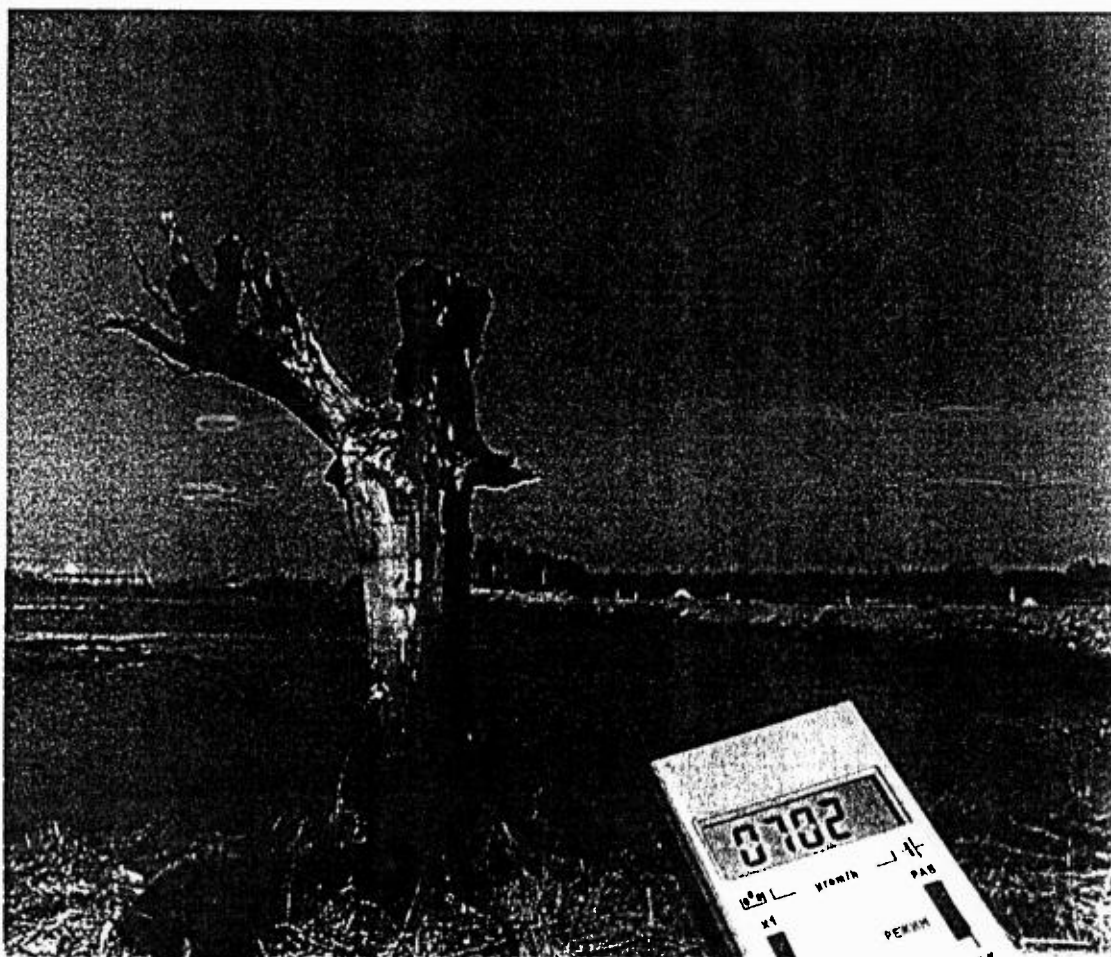


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Exposition de photos

Tchernobyl - quinze ans de tragédie

Cette exposition est appelée à attirer l'attention de la communauté internationale non seulement aux conséquences directes de la catastrophe nucléaire de Tchernobyl, mais également à l'importance de la solidarité internationale dans la lutte contre l'influence néfaste sur l'homme et l'environnement à long terme



*Mardi 17 avril au Vendredi 27 avril 2001
10 – 18 h*

*Maison de l'UNESCO – Hall Ségur
7, place de Fontenoy, Paris 7e*