1. Introduction

Highly pathogenic avian influenza (HPAI) has seriously affected poultry farmers whenever and wherever it has appeared. Historically, outbreaks of HPAI have occurred in all continents. The current avian influenza epidemic, caused principally by the H5N1 strain, has been continuing since it was first recognised in the Republic of Korea in December 2003. Despite concerted attempts at control, Thailand, Viet Nam, Indonesia and China are still recording outbreaks and there are major control campaigns being implemented in Viet Nam and Indonesia. Some outbreaks are still being recorded in Cambodia. Lao People's Democratic Republic, where a few outbreaks occurred, is now apparently free at the time of writing.

However, two circumstances have increased international concern about the behaviour and spread of this disease. The first is that, at the time of publication of this manual, more than 230 cases of transmission of the virus to humans have been recorded, with an approximately 50 percent fatality rate. There is increasing concern that in the future the virus will adapt to enable human-to-human transmission with ease and result in a global human influenza pandemic if not contained in time. Secondly, between August and December 2005, the disease has spread over wide geographical area and was reported in the Russia Federation, Turkey, Croatia, Romania and Ukraine. In February 2006, the disease was reported on the African continent with the first notification of the HPAI H5N1 strain in Nigeria. The occurrence of the disease in Africa is of major concern, putting at immediate risk the livelihood of millions of people relying on poultry production for income generation and sources of protein[1]. If this situation runs out of control, it will have a devastating impact on the poultry population in the region and will increase the exposure of humans to the virus.

It is difficult to predict the severity of either of these threats. The virus has been present in China since at least 1996 and probably disseminated to Southeast Asian countries at least some months before it developed into the epidemic beginning in 2003. There has been enormous opportunity for the virus to infect humans, which has probably occurred much more than has been identified, and yet adaptation for human-to-human transmission has not yet occurred. However, this does not imply that it will not occur and the greater the shedding of virus from infected poultry the greater the risk of adaptation leading to a human pandemic. Similarly, despite opportunities for the virus to spread in wild birds, to date it has caused minimal disease in poultry outside Southeast and East Asia. Again, whether this will occur in the future is difficult to predict.

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[1] In this document, poultry is referred as 'all birds reared or kept in captivity for the production of meat or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds'. This definition has been recently adopted by OIE in the 2005 edition of the *Terrestrial Animal Health Code,* Chapter on Avian Influenza. (OIE, 2005a)

Countries may be under threat of introduction of avian influenza through exposure of poultry to wild birds, especially waterfowl. They may also be at risk from introduction of infected or contaminated poultry, poultry products or fomites. This represents a threat to poultry industries around the world, to people's livelihoods, and to a source of high quality and inexpensive protein complement to diets. Human populations are also at risk if an influenza pandemic occurs.

This manual is intended to assist national animal health authorities and other stakeholders consider the needs for preparing for a possible incursion of HPAI, to detect disease at the earliest opportunity and to respond as rapidly as possible to contain the disease.

The international community has a vested interest in minimising the spread of this disease. FAO, together with World Organization for Animal Health (OIE) and World Health Organization (WHO), are the key agencies for coordinating an international response to the threat. This manual also assists countries in determining means of obtaining outside assistance to improve their preparedness for highly pathogenic avian influenza and its detection.