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**ESTABLISHMENT OF REGIONAL COOPERATION ON  
AVIAN INFLUENZA PREVENTION AND CONTROL \***

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## CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION: <i>emerging diseases... threats to global health security</i>	3
2. STATUS OF AVIAN INFLUENZA: <i>changing dynamics...evolving challenges</i>	3
3. PARTNERSHIPS: <i>bridging the gaps.....enhancing collaboration</i>	7
4. INTER-COUNTRY AND INTER-REGIONAL COOPERATION: <i>building on experiences</i>	8
5. STRATEGIES TO ENHANCE REGIONAL COOPERATION: <i>maximizing the benefits</i>	9
5.1 Goals and Objectives	9
5.2 Broad Strategies to Enhance Cooperation	9
6. CONCLUSION: <i>mounting and imminent threats... need for urgency to act</i>	11

## EXECUTIVE SUMMARY

The world today is faced with the emergence of new global health threats for which preventive and control measures are still evolving, such as avian influenza, SARS, Ebola, and AIDS. In addition, many “older” diseases, such as tuberculosis and malaria, have re-emerged and have become a greater threat than before due to resistance to drugs commonly used to treat them. The experiences from the recent pandemics of Severe Acute Respiratory Syndrome (SARS) attest to this reality.

The most recent pandemics of SARS and of highly pathogenic avian influenza (H5N1), with huge losses to the economy of many countries, signal that infectious diseases pose a threat to human welfare and socioeconomic development as never seen before. The high toll of avian influenza pandemics on income of households and national economies once more attests that infectious diseases are not only a threat to health, but have wider consequences on the socioeconomic development of nations.

With the ever-changing nature of pathogens, fast population growth, growing urbanization, globalization with its international tourism, travel and trade, infectious agents will continue to pose mounting challenges to health and development. While globalization has boosted opportunities for growth, development and cooperation, it has also created challenges for the infectious disease policy. These policy challenges are those that arise between Member States from microbial traffic related to international trade and travel and those related to problems faced by States face within their territories, such as surveillance capacities for infectious disease which require responses within states.

In the light of the above, cooperation across borders has become an essential strategy in combating these challenges. The experiences and lessons from the Global Outbreak Alert and Response Network, which brings together existing institutions and networks in many Member States, has shown that technical collaboration to combat the spread and containment of infectious diseases is feasible and effective. The recent global experiences from SARS and avian influenza pandemic demonstrate the need to strengthen such cooperation at inter-country and inter-regional levels to meet these challenges. Seen against the backdrop of inequitable distribution of resources and core capacities, it has become obvious that such cooperation also make good socio-economic and political sense for both resource-poor as well as resource-rich countries of the Region.

Therefore, to effectively and efficiently prevent and control infectious diseases, and avert serious consequences that may arise from such threats, it is imperative to strengthen global, inter-regional and inter-country cooperation. One such area of cooperation is in the prevention and control of avian influenza.

Enhancing cooperation in this area has four main comparative advantages to the Asian Region.

First, the pandemic of avian influenza is not over yet and poses further threats to poultry and human health. Considering the fact that poultry and tourism are among the leading sources of income for the Region, averting and containment of similar pandemics will contribute to the mitigation of their negative socioeconomic and health impacts to Member States, thus facilitating the growth of national and regional economies.

Secondly, countries of the Region which were affected by the pandemic, particularly Thailand have accumulated a wealth of experience that this cooperation

can build upon. This invaluable experience can benefit other Member States in the Asian region and beyond to improve pandemic preparedness for avian influenza. The presence of centres of excellence in research, surveillance and training in Thailand is an added advantage. Research in this field requires sophisticated laboratory equipment, manpower and funds, which not every country can afford to have; neither is it necessary and cost-effective to have such a centre in each country of the Region.

Thirdly, both the Western Pacific (WPR) and the South-East Asia (SEA) Regions can benefit from existing collaborative mechanisms such as ASEAN and SAARC, to promote bi-regional and intercountry cooperation in the field, building upon the goodwill and networking established responding to the pandemics of SARS and avian influenza. The presence of three Member States of the SEA Region (Thailand, Indonesia and Myanmar) in ASEAN also has the potential for mobilizing resources and expertise for such inter-regional cooperation between WPRO and SEARO.

Fourthly, this initiative to establish an inter-country and inter-regional cooperation can provide generic models for cooperation in infectious diseases prevention and control. In the longer-term, this cooperation certainly contributes to research and development in other areas of emerging diseases.

This brief summary, therefore, reviews the challenges faced by the Member States with regard to avian influenza and provides a perspective upon which cooperation can be enhanced to avert and contain pandemics of avian influenza and reduce their consequences.

To enhance this initiative and for WHO to undertake a leading role in this area, it is suggested to establish an appropriate mechanism, if possible with an identified dedicated coordinating centre on avian influenza and other emerging diseases in one of the regional Member States, with adequate technical expertise, necessary experience and potentials for the mobilization of required resources. The experience on avian influenza could serve as an example on the basis of which similar centres could be established in other countries to deal with specific pathogens.

## 1. INTRODUCTION: *emerging diseases... threats to global health security*

Infectious diseases remain among the leading causes of morbidity and mortality in many parts of the world. And while new infectious diseases emerge, others are on the rise at an alarming rate. The last three decades have witnessed the emergence of more than 30 newly-recognized infectious diseases, ranging from AIDS to Ebola and SARS. On the other hand, diseases like malaria, cholera, meningitis, influenza and tuberculosis have re-emerged on an unprecedented scale<sup>1</sup>. Many of these infectious diseases cause epidemics, and often pandemics, that challenge the health systems in countries with limited resources. The recent pandemic of avian influenza, which was unprecedented in its scale, is a reminder that another pandemic is inevitable and possibly imminent.

While several factors contribute to this phenomenon, most are associated with population growth, rapid globalization, overcrowding, antimicrobial resistance, and emergence of new strains. Moreover, the impact of the changing ecology, encounters of humans to disease vectors and reservoirs, mass production and marketing of processed food stuff over vast geographic area contribute to the emergence and fast spread of infectious diseases.<sup>2</sup> Today, as never before, infectious diseases pose threats to health security!

Despite these challenges, there are encouraging signs of global collaboration and success in fighting against the threats of infectious diseases, including in areas of research, vaccine development and laboratory diagnostics. The lessons from pandemics of avian influenza and SARS have made it evident that the global community needs and can act together in responding to such public health emergencies of international concern.<sup>3,4</sup> In fact, these experiences have shown the critical role cooperation has in controlling infectious diseases.

In view of the current challenges and evolving needs, it is imperative to strengthen capacity for early recognition, confirmation, notification and containment of such threats. Similarly, with the growth of information technology as source of health event information, it is essential to improve the capacity to track, assess and verify rumours of outbreaks.<sup>5</sup> In particular, there is a need to improve capacity for surveillance, better preparedness and disease early warning systems to tackle threats of infectious disease.

Considering the experiences from the recent avian influenza pandemics and its unpredictable nature, it is of paramount importance to strengthen cooperation in avian influenza prevention and control.

## 2. STATUS OF AVIAN INFLUENZA: *changing dynamics...evolving challenges*

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<sup>1</sup> WHO. Emerging Infectious Diseases; 1997; WHD97.1

<sup>2</sup> Halstead S.B. Human factors in emerging infectious diseases. EMJH. 1996; (2):1:21-29 (<http://www.emro.who.int/publications>)

<sup>3</sup> WHO. Revision of the International Health Regulations: Severe Acute Respiratory Syndrome (SARS). 2003; A56/48

<sup>4</sup> WHO. Consultation of priority public health interventions before and during an influenza pandemic, Geneva, 16-18 March 2004 (Draft)

<sup>5</sup> Grein WT, Kamara OK, Rodier G, et al. Rumors of disease in the global village: outbreak verification. WHO Perspectives

The history of influenza has been dominated by pandemics of human influenza with a heavy toll of human life. For example, the twentieth century recorded history of human influenza pandemic documents that during the “Spanish flu” pandemic of 1918-1919, an estimated 40 to 50 million deaths occurred worldwide. This pandemic can be described as the most disastrous of all the influenza pandemics recorded in history. Yet again, in 1957, the “Asian flu” pandemic swept parts of the continent and led to an estimated 4 million deaths. Similarly, another influenza outbreak in 1968, also called “Hong Kong flu”, is estimated to have claimed another 4 million lives. All these pandemics, which had a devastating effect among the world population, were known to be transmitted among humans<sup>6</sup>. Yet, to make things even worse, a different phenomenon is evolving- transmission from birds to humans.

On the other hand, avian influenza, which was first reported more than a century ago in Europe, has been fast changing and spreading worldwide. While there are 15 subtypes of the virus, most do not normally infect other species than birds and pigs. This however provides ample opportunity for virus circulation in bird populations and viral mutations and also increases the risk of direct infection of humans. Out of the subtypes, H5N1 is of particular concern due to its capacity to mutate rapidly and its tendency to acquire genes from viruses infecting other animal species and is highly pathogenic. Moreover, recent research has shown that other subtypes of low pathogenicity can also mutate into highly pathogenic viruses. Worryingly, unknown before 1997, a second mechanism, a direct jump (without reassortment process) from a species barrier is documented to cause transmission of the virus from birds directly to humans. This development has further increased the risk of human infection with viruses hitherto known to cause only diseases among birds.

The world’s first human case of infection with avian influenza caused by H5N1 Influenza A was recorded in 1997 in Hong Kong, China. In December 2003, highly pathogenic avian influenza H5N1 outbreak in poultry was reported in the Republic of Korea and later swept through Cambodia, China, Indonesia, Japan, Laos, Thailand and Viet Nam. In January 2004, human cases of H5N1 avian influenza were confirmed in Viet Nam and Thailand. Until the end of March 2004, a total of 34 human cases, including 23 deaths were confirmed, with a very high fatality rate (61%)<sup>7</sup>.

**Table 1: Confirmed cases of avian influenza A (H5N1) in Asia, January-March 2004**

Country	Total cases	Deaths
Thailand	12	8
Viet Nam	22	15
Total	34	23

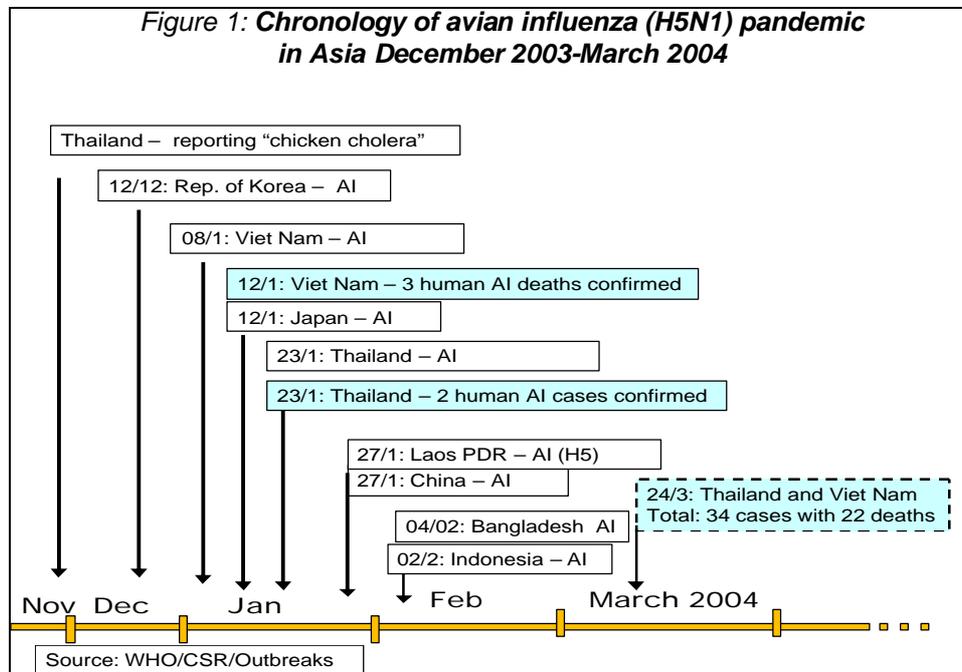
Source: WHO/CSR/Outbreaks

The most recent, March 2004, the first human case of avian influenza H7, is another indication of the changing dynamics and the increasing risk of transmission of avian influenza from birds to humans. The fact that most of the poultry farms are in

<sup>6</sup> WHO. *Influenza: preparedness for the inevitable*. In: Global defense against the infectious disease. 2002:68-73.

<sup>7</sup> AI updates: Confirmed human cases. [http://www.who.int/csr/avian\\_influenza/cases\\_table](http://www.who.int/csr/avian_influenza/cases_table)

small rural farms and backyard holdings where early recognition and intervention to control further spread is difficult makes this risk and a possibility of another pandemic high.



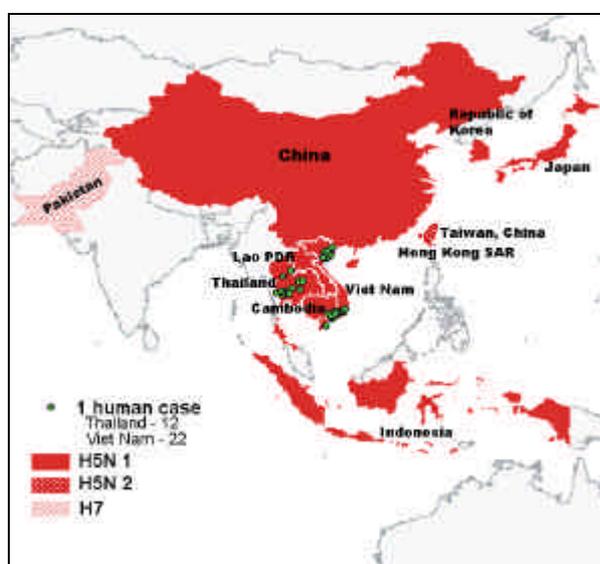
The most recent pandemic of avian influenza which affected Asia has been historically unprecedented in its geographical scope, international spread, and economic consequences for the agricultural sector. More than half of the affected Asian countries experienced highly pathogenic avian influenza for the first time in their histories. Although the number of human cases of H5N1 infection compared to the affected bird population was small, this can change, with the virus improving its transmissibility through mutation and reassortment. Most importantly, the timing is often unpredictable and requires continuous vigilance to recognize early signs among poultry, including in small holdings and backyard poultry farms. This calls for close cooperation with animal health and agricultural sectors and community development organizations.

The implications of the above events for human health are two-fold. First, the H5N1 strain has demonstrated its capacity to infect humans and cause severe disease, with high fatality. The disease in humans has no vaccine to confer protection and no specific treatment once illness becomes severe. The second and greater concern is the possibility that a new virus subtype with pandemic potential could emerge.

Experiences from past pandemics have documented that the economic impact of avian influenza and its control measures are high. For example, the 1983-1984 outbreak of influenza among birds required the destruction of more than 17 million birds at a cost of nearly US\$65 million. In another outbreak in 1999-2000 in Italy, more than 13 million birds were destroyed to prevent further spread. The 1997 avian influenza outbreak in Hong Kong is estimated to have cost hundreds of millions of dollars in lost poultry production, commerce and tourism. An estimated 1.5 million birds were destroyed to prevent further spread among poultry farms and further transmission to humans.

The latest pandemic in Asia has caused culling of more than 100 million birds to control further spread. Moreover, measures taken by some Member States on imports of live birds and poultry have caused economic losses and disrupted international travel, tourism and trade. Considering the significance of poultry production and its dramatic increase over the past decades in Asia, it is evident that the pandemic has caused huge losses in income to millions of households and national economies. This has also a bearing on the nutrition status of the population as poultry is the staple food providing nearly a third of the total protein to households in Asia<sup>8</sup>. Overall, with more than eight Asian countries affected by the latest outbreak of avian influenza, and culling of millions of birds to control further spread, it is believed that the economic loss resulting therefrom is estimated to have cost billions of dollars.

**Figure 2: Distribution of the latest avian influenza pandemic in Asia, as of 17 March 2004**



Data source: OIE/FAO/WHO: National authorities

Disclaimer: The presentation of material on the maps contained herein does not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or areas or its authorities of its frontiers or boundaries.

Today, the risk of another pandemic with a threat to human health remains high so long as H5N1 continues to circulate in domestic poultry. Thus, there is a need to strengthen cooperation to apply strong surveillance, control and biosecurity measures to ensure that new outbreaks are detected and contained immediately<sup>9</sup>. This is of utmost priority due to the fact that pandemics recur periodically yet unpredictably, and are invariably associated with high morbidity and mortality and great social and economic disruption.

Reassuringly, conditions for the start of an influenza pandemic are better understood now than previous times. This improved knowledge, when combined with efficient surveillance and immediate and aggressive action, might make it possible to

<sup>8</sup> WHO. Avian Influenza and human health. April 2004, EB114/6

<sup>9</sup> Assessment of risk to human health associated with outbreaks of highly pathogenic H5N1 avian influenza in poultry. 14 May 2004; [http://www.who.int/csr/disease/avian\\_influenza/assessment](http://www.who.int/csr/disease/avian_influenza/assessment)

detect events with pandemic potential, delay, or even prevent, escalation and global spread. To do so it is essential to invest in surveillance and notification systems and to work in collaboration between public health and agricultural sectors.

In summary, the above facts on avian influenza pandemic, its fast and unprecedented spread, evolving nature of the virus, and the risk of mutation and reassortment show the continuous challenges and threats posed. On the other hand, the impact of early and coordinated response has proved that cooperation is feasible and effective. In general, the situation of avian influenza has underscored the need for cooperation among the international community in general, and regional countries in particular. It has clearly demonstrated that in this era of globalization and interdependence, partnership is a necessity.

### **3. PARTNERSHIPS: *bridging the gaps.....enhancing collaboration***

The past three decades have shown that outbreaks of emerging infectious diseases can spread across geographic boundaries in a short period of time. On the other hand, globalization has created infectious disease challenges that force states to cooperate. Historically, international law has been important in facilitating such cooperation in the control of infectious diseases. While this role has never been more important today, it needs to be supplemented by regional and sub-regional cooperation and partnerships<sup>10</sup>.

The appreciation of the need for cooperation is growing, as observed during the recent epidemic of avian influenza when inter-country cooperation was scaled up through consultative meetings, regular electronic and teleconferencing, and technical support. Similarly, a consultation on avian influenza, hosted by the Government of Thailand, was held between the ministers for health and agriculture of 12 Member States and Taipei, and representatives from FAO, WHO, OIE, and EU. The briefing for SAARC Member States on avian influenza was another example of appreciation of the need for partnerships. Similarly, the inter-regional cooperation between the South-East Asia and the Western Pacific Regional Offices in the areas of technical support, joint advocacy, training and planning workshops has attested to the importance the two regions attach to partnerships in the fight against avian influenza. The bi-regional training workshop on highly pathogenic avian influenza (H5N1), conducted in March 2004 and hosted by the Ministry of Health of Thailand, is an excellent example of the growing cooperation. Since then similar collaborative activities, such as training for avian influenza epidemic preparedness and on the revision process of the International Health Regulations, have taken place.

Additionally, existing inter-country and inter-regional networks such as SAARC and ASEAN have been cooperating in health issues of mutual concern. The 2002 Male' Declaration on SARS, which called for improving surveillance, notification and information sharing, is proof to the increasing role such networks play in enhancing partnerships in the area of infectious diseases control. The SAARC emergency meeting on avian influenza can be cited as a growing sign of the value cooperation has gained among regional governments. Moreover, the participation of three Member States of the SEA Region, viz. Thailand, Indonesia and Myanmar, in ASEAN serves as a bridge for fostering further inter-regional cooperation among the South-East Asia and Western Pacific regions. These experiences are invaluable in rallying political support and

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<sup>10</sup> Fidler DP. Emerging Trends in International Law Concerning Global Infectious Disease Control. *Emerg Inf Dis*; 2003 (vol 9):3:285-290.

mobilizing resources required for cooperation in prevention and control of avian influenza.

Based on these experiences, it is suggested to establish a cooperation mechanism for the prevention and control of avian influenza. The purpose of this initiative is to promote inter-country and inter-regional cooperation, advocacy for resource mobilization, capacity building, improving epidemic preparedness and response, research and development, and as appropriate, improve laboratory facilities. Furthermore, this partnership will create a forum for stakeholders to regularly consult on issues pertinent to avian influenza and other emerging infectious diseases.

The growing interest and commitment among the leadership of both the regions to consolidate and expand bi-regional collaborative activities, and the interest and experience of Member States in socioeconomic collaborative activities are sound basis for the realization of this partnership.

#### **4. INTER-COUNTRY AND INTER-REGIONAL COOPERATION:** *building on experiences*

As observed during the recent avian influenza (H5N1) epidemic, some countries acted quickly to institute public health measures and have prevented further spread of the disease. Yet, the unprecedented scale and its fast spread have revealed the potentials of risk to Member States. This warrants a sustained and formal cooperation among member states to facilitate timely sharing of information, exchange of expertise and joint research and capacity building to minimize the risk and contribute to prompt response when such threats occur.

Countries in both the South-East Asia and the Western Pacific regions have a wealth of experience in these areas which can be optimally tapped to benefit other Member States. This can be achieved when a cooperating mechanism is instituted. Member States are the key actors for success in infectious disease control. As much of this requires public health actions, the public sector has a significant role in the delivery of these public goods. Inter-country cooperation can promote the delivery of these goods through the exchange of experiences and lessons, and technical and financial support between cooperating countries. This cooperation aims at facilitating collaboration among Member States in the SEA Region and fostering mutual support to prevent and control avian influenza.

The WHO South-East Asia and Western Pacific regions cover a large geographic area and constitute more than half of the global population. The regions are among the most densely populated areas in the world. In the last two decades, the regions have witnessed a fast growing economy. With this growth, there has been an increase in international trade, tourism and travel. As a result, much of the regional growth has become more interdependent than ever before. At the same time, the risk of spread of infectious diseases, as seen with the avian influenza epidemic, has increased with globalization.

Cognizant of these developments and experiences, the two WHO regional offices have been working together, on ad hoc basis, in the areas of infectious diseases control. The collaborative activities during the epidemics of SARS and avian influenza can serve as a good start to formal cooperation. The expressed interest of the leaderships of the two regional offices has further created conducive policy environment for establishing inter-regional cooperation to prevent and control avian influenza.

This cooperation, therefore, will build upon the experiences and lessons from existing networks like SAARC and ASEAN. Similarly, this cooperation will build upon the cooperation during the recent epidemic of avian influenza in the areas of training, laboratory support and information exchange.

The presence of a wealth of experience in responding to the epidemic of avian influenza and of centres of excellence to provide prompt field support in Thailand offers excellent opportunities for establishing cooperation in the area. This mechanism is critical for strengthening inter-country and inter-regional cooperation in the prevention and control of avian influenza.

## **5. STRATEGIES TO ENHANCE REGIONAL COOPERATION: *maximizing the benefits***

The summaries in sections 1 and 2 above show that while the threat of epidemic of avian influenza remains high, there is an urgent need to improve our epidemic preparedness and response capacity. As described in sections 3 and 4, partnership and cooperation do have a significant role in enhancing cooperation to prevent and control avian influenza. To ensure that the benefits from this cooperation are sustained and effective the following strategies and areas for cooperation are suggested.

### **5.1 Goals and objectives**

The main goal of this cooperation is prevention and containment of avian influenza epidemic and related emerging diseases and reducing their impacts.

The main objective of this cooperation is to improve surveillance and epidemic preparedness based on assessed risk, both for humans and poultry populations, with outbreaks of highly pathogenic avian influenza.

The more specific objectives include: strengthening national capacities for early detection and verification, improving capacity for risk assessment and communication, and strengthening the level of national epidemic preparedness, including in laboratory diagnostics.

### **5.2 Broad Strategies to Enhance Cooperation**

#### ***Advocacy and consensus building***

It is obvious that effective advocacy plays a critical role in building consensus among stakeholders, and in facilitating the process of implementation of activities to achieve envisioned goals and objectives. SAARC and ASEAN offer excellent opportunities for advocacy to prevent and control avian influenza. Moreover, the lessons from Thailand in rapidly introducing measures that have greatly reduced further spread during the epidemic of avian influenza need to be documented for advocacy. Using these experiences and opportunities, it is warranted to undertake advocacy activities on the need for an institutional mechanism to coordinate this initiative.

#### ***Situation analysis***

In most cases, the success of initiatives and programmes largely depends on the design process. Those which are based on thorough analysis of the existing situation and have clearly defined goal and objectives, with effective and feasible strategies are tuned to achieve their targets. To ensure that this is met, an analysis of the past

experiences and lessons, and current strengths, weaknesses and gaps in prevention and control of avian influenza is essential.

Based on the findings, areas of cooperation need to be further elaborated. Both regions can undertake this exercise, preferably jointly, to identify areas of comparative expertise and needs.

### ***Establishing advisory groups***

Building on the experiences from the Task Forces on SARS and Avian influenza on exchange of expertise and information, which were instrumental in offering guidance and technical support in case surveillance, verification, case management, and risk communication, it is essential to establish an advisory group for cooperation on avian influenza and related emerging diseases. This advisory group can provide such guidance on longer-term bases, and enhance cooperation among partners. Furthermore, experiences from Member States in establishing country-level advisory groups for SARS and avian influenza can serve as the basis for moving forward with the establishment of an inter-country advisory group.

### ***Defining areas of cooperation***

Another important strategy to enhance this cooperation is defining the areas of cooperation in prevention and control of avian influenza. While there can be many areas of cooperation that Member States may benefit from, this cooperation needs to identify areas with comparative advantages in terms of priorities for prevention and control of avian influenza, available expertise, and strategies and resources required to accomplish its objectives. Moreover, this cooperation requires sustained support and commitment at all levels, and hence, defining the roles and responsibilities of stakeholders in this initiative is important.

### ***Suggested areas of cooperation***

Based on the above premise, emphasis should be given in areas of strengthening surveillance, risk assessment, research, capacity building, and enhancement of public health interventions for epidemic preparedness.

The status of disease surveillance among Member States differs widely. Some countries have instituted strong surveillance systems with a capacity to detect early warning signals of outbreaks. Improving national surveillance systems and preparedness for avian influenza is critical for prevention and control of pandemics. Therefore, cooperation can promote capacity building in these areas and improve capacity for surveillance and response among Member States. To this end, training, expertise exchange programmes, joint field investigation activities, and development of guidelines and tools can be considered.

Another important area of emphasis is establishing a functional laboratory referral networking with the necessary biosafety and diagnostic capacity which is a priority area of cooperation. An effective public health laboratory system is a prerequisite for the investigation of epidemics and their management. Creating a new infrastructure is extremely expensive, time consuming and difficult to sustain by most of the developing countries. Several laboratories in health and veterinary sectors as well as teaching institutions have infrastructure and qualified staff that can support public health activities but are not part of conventional public health support system. It is worthwhile to harness and synergise the available laboratory services for improved management of outbreaks by forging a network and upgrading the skills of laboratory professionals in

Member States, such as Thailand and India. WHO is also willing to support a network that shall complement and support the proposed Regional Outbreak Alert and Response Network as well as existing Global Outbreak and Alert Response Network (GOARN).

Other areas of cooperation are: strengthening early warning surveillance systems, pandemic preparedness and rapid verification and response to avian influenza. Countries with expertise in these areas can provide technical support to other Member States.

More specific strategic areas for cooperation in this regard include;

- Capacity building: training, expertise exchange programmes, and workshops and seminars in epidemiological and laboratory surveillance, and case management
- Research including in laboratory diagnostics, and epidemiological and clinical studies
- Public health surveillance - monitoring regional and global occurrence of human influenza A(H5N1) and avian influenza (H5N1) and related pathogens
- Risk assessment including surveillance on transmission patterns of influenza A(H5N1) viruses, including on potential human-to-human transmission
- Risk communication - developing the capacity of Member States to use findings of and recommendations from risk assessment to improve prevention and control
- Development of reagents for diagnostic testing
- Advocacy for resource mobilization, access to vaccines, antiviral drugs and Personal Protective Equipment (PPE)

These areas of cooperation will be built upon the experiences of Member States within the two regions. The cooperation can also benefit from and contribute to the global initiative to enhance epidemic preparedness for influenza.

### ***Institutional arrangement***

In the light of the emerging nature of avian influenza and its evolving challenges, it may be necessary for WHO to establish a coordinating centre that links existing collaborating centers with expertise in the above strategic areas. To benefit from the past and ongoing activities in this area, it is logical and feasible to consider centres of excellence with a track record of experience in avian influenza prevention and control, and related research and training activities. This ensures that the cooperation builds upon country experiences and benefits from the successes made so far in the area.

The experience from avian influenza could help establish cooperation also in other emerging diseases including the establishment of specific centres to deal with various diseases of public health importance.

## **6. CONCLUSION: *mounting and imminent threats... need for urgency to act***

The experiences from the recent epidemic of avian influenza have shown that the health and economic ramifications to the Asian region were huge. It is also a clear reminder that cooperation is a necessity to combat the threat of infectious diseases. It

has also amply demonstrated that globalization creates conditions that force states to cooperate. These developments reinforce the need to extend ongoing collaboration in the areas of economics and health, to inter-country and inter-regional cooperation on prevention and control of avian influenza.

Considering the history of influenza in general, the calamity both human and avian influenza epidemics have caused in the last century has been enormous. The recent developments in the transmission of avian influenza from birds to humans are reasons for a growing concern and uncertainty on when and how the future pandemics could happen. This warrants a sustained effort and even stronger cooperation among Member States to strengthen surveillance and pandemic preparedness.

Building on past lessons and experiences, and ongoing efforts in prevention and control of avian influenza, there is a dire need to consolidate efforts and to further a formal and more institutionalized cooperation. To this end, it is of high importance and timely to have a dedicated centre to coordinate this initiative. This paper thus requests Member States to give their guidance in ensuring that such a coordinating centre be established with a clearly-defined mandate to promote cooperation in prevention and control of avian influenza and related diseases.