Indonesian Nutrition Capacity Assessment
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## ABBREVIATIONS

<table>
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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AIPGI</td>
<td>Asosiasi Institusi Pendidikan Gizi Indonesia (Association of Indonesian Nutrition Education Institutions)</td>
</tr>
<tr>
<td>AIPKI</td>
<td>Asosiasi Institusi Pendidikan Kedokteran Indonesia (Association of Medical Education Institutions)</td>
</tr>
<tr>
<td>AMG</td>
<td>Ahli Madya Gizi (D3)</td>
</tr>
<tr>
<td>AG</td>
<td>Ahli Gizi (D4)</td>
</tr>
<tr>
<td>ASDI</td>
<td>Asosiasi Dietisien Indonesia</td>
</tr>
<tr>
<td>BAN-PT</td>
<td>Badan Akreditasi Nasional Perguruan Tinggi (National Accreditation Board for Higher Education)</td>
</tr>
<tr>
<td>BAPPEDA</td>
<td>Badan Perencanaan Pembangunan Daerah (Local development planning board)</td>
</tr>
<tr>
<td>BAPPENNAS</td>
<td>Badan Perencanaan Pembangunan Nasional (National development planning board)</td>
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<tr>
<td>BDD</td>
<td>Bidan di Desa (Village Midwife)</td>
</tr>
<tr>
<td>BKD</td>
<td>Badan Kepegawaian Daerah (Regional Civil Service Agency)</td>
</tr>
<tr>
<td>BKN</td>
<td>Badan Kepegawaian Nasional (National Civil Service Agency)</td>
</tr>
<tr>
<td>BPPSDMK</td>
<td>Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan (National Institute of Health Human Resources Development and Empowerment)</td>
</tr>
<tr>
<td>CBC</td>
<td>Competency-Based Curriculum</td>
</tr>
<tr>
<td>CSU</td>
<td>Credit semester unit</td>
</tr>
<tr>
<td>DEPKES</td>
<td>Departemen Kesehatan (Ministry of Health)</td>
</tr>
<tr>
<td>DGHE</td>
<td>Director General of Higher Education</td>
</tr>
<tr>
<td>DIKTI</td>
<td>Pendidikan Tinggi (Directorate General for Higher Education, MoNE)</td>
</tr>
<tr>
<td>Gol</td>
<td>Government of Indonesia</td>
</tr>
<tr>
<td>DPRD</td>
<td>Dewan Perwakilan Rakayt Daerah</td>
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<tr>
<td>HWS</td>
<td>Health Workforce and Services (World Bank-funded project)</td>
</tr>
<tr>
<td>IAKMI</td>
<td>Ikatan Ahlai Kesehatan Masyarakat Indonesia (Indonesian Public Health Association)</td>
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<tr>
<td>IDHS</td>
<td>Indonesia Demographic and Health Survey</td>
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<tr>
<td>IDI</td>
<td>Ikatan Dokter Indonesia (Indonesian Medical Association)</td>
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<tr>
<td>IFLS</td>
<td>Indonesia Family Life Survey</td>
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<tr>
<td>Jamkesmas</td>
<td>Jaminan Kesehatan Masyarakat (Community Health Insurance Scheme)</td>
</tr>
<tr>
<td>KDI</td>
<td>Kolegium Doktor Indonesia (Colloguium of Indonesian Doctors)</td>
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<tr>
<td>KFI</td>
<td>Kolaisis Fortifikasi Indonesia (Indonesian Fortification Coalition)</td>
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<tr>
<td>KKI</td>
<td>Konsil Kedokteran Indonesia (Indonesian Medical Council)</td>
</tr>
<tr>
<td>KIGI</td>
<td>Kolegium Ilmu Gizi Indonesia (Colloguium of Indonesian Nutrition Sciences)</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MoHA</td>
<td>Ministry of Home Affairs</td>
</tr>
<tr>
<td>MoNE</td>
<td>Ministry of National Education (now subsumed by the MOE&amp;C)</td>
</tr>
<tr>
<td>MOE&amp;C</td>
<td>Ministry of Education and Culture</td>
</tr>
<tr>
<td>MOWT</td>
<td>Ministry of Workforce and Transmigration</td>
</tr>
<tr>
<td>MTKP</td>
<td>Majelis Tenaga Kesehatan Provinsi (Provincial Health Workforce Council)</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem-Based Learning</td>
</tr>
<tr>
<td>PDGMI</td>
<td>Perhimpunan Dokter Gizi medik Indonesia (Indonesia Medical Nutrition Association)</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
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<tr>
<td>PDGKI</td>
<td>Perhimpunan Dokter Gizi Klinis Indonesia (Association of Indonesian Medical Doctor Specializing in Clinical Nutrition)</td>
</tr>
<tr>
<td>PERSAGI</td>
<td>Persatuan Ahli Gizi Indonesia (Indonesian Nutritionist Association)</td>
</tr>
<tr>
<td>PNPM</td>
<td>Program Nasional Pemberdayaan Masyarakat (National Program for Community Empowerment)</td>
</tr>
<tr>
<td>PUSDIKLAT</td>
<td>Pusat Pendidikan dan Latihan (Center for In-service Education and Training – MoH)</td>
</tr>
<tr>
<td>PUSDIKNAKES</td>
<td>Pusat Pendidikan Tenaga Kesehatan (Center for Health Workforce Education)</td>
</tr>
<tr>
<td>Puskesmas</td>
<td>Pusat Kesehatan Masyarakat (Community Health Center)</td>
</tr>
<tr>
<td>PUSPRONAKES</td>
<td>Pusat Pemberdayaan Profesi dan Tenaga Kesehatan Luar Negeri (Center for Foreign Health Personnel and Professional Empowerment)</td>
</tr>
<tr>
<td>PUSRENGUN</td>
<td>Pusat Perencanaan dan Pendayagunaan (Center for Human Resources Efficiency and Planning)</td>
</tr>
<tr>
<td>Repelita</td>
<td>Rencana Pembangunan Lima Tahun (Five-Year Development Plan)</td>
</tr>
<tr>
<td>Sakernas</td>
<td>Survei Tenaga Kerja Nasional (National Labor Force Survey)</td>
</tr>
<tr>
<td>SIMPEG</td>
<td>Sistem Informasi Kepegawaian (Civil Service Information System)</td>
</tr>
<tr>
<td>SIM-PPSDMK</td>
<td>Sistem Informasi Manajemen - Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan (Health Human Resources Empowerment and Development Agency – Management Information System)</td>
</tr>
<tr>
<td>SGz</td>
<td>Sarjana Gizi (Undergraduate of nutrition)</td>
</tr>
<tr>
<td>SKM</td>
<td>Sarjana Kesehatan Masyarakat (Undergraduate of Public Health)</td>
</tr>
<tr>
<td>SPM-PT</td>
<td>Higher Education Quality Assurance System</td>
</tr>
<tr>
<td>Susenas</td>
<td>Survei Sosial Ekonomi Nasional (National Socioeconomic Survey)</td>
</tr>
<tr>
<td>TRD:</td>
<td>Technical Registered Dietitian (D3/profesi)</td>
</tr>
<tr>
<td>RD</td>
<td>Registered Dietitian (S1/Profesi)</td>
</tr>
<tr>
<td>UGM</td>
<td>Universitas Gadjah Mada (Gadjah Mada University)</td>
</tr>
<tr>
<td>WISN</td>
<td>Workload Indicator of Staffing Need</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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</table>
1. EXECUTIVE SUMMARY

The nutrition situation in Indonesia

Nutritional status in Indonesia has improved markedly in the decades leading up to 2000, to the point that UNICEF has concluded that Indonesia is likely to reach the nutrition MDG. This progress has been explained to be due to a combination of economic growth, agricultural development, improvement in water and sanitation, and a community-based nutrition program (UPGK). This prediction however is being undermined by evidence of increases in malnutrition since 2005, the global financial crisis, poor nutrition program performance and related workforce capacity deficit. Progress on nutrition appears to have stalled since 2000, with stunting rates still high (36%), and with continued wide disparity across provinces.

Task and methodology

This study explores and assesses nutrition capacity in Indonesia across system, organisational, workforce and individual dimensions. A rapid assessment methodology has been employed, including:

- desk review of available and relevant white and grey literature
- consultative interviews with key informants and stakeholders, followed by
- critical analysis (including SWOT) of available evidence using conceptual frameworks for capacity assessment derived from the literature

Capacity bottlenecks identified in this analysis

The following summary table highlights the major capacity bottlenecks (defined as those factors that impede the ability to achieve the objective of effectively improving nutrition) at system, organisational, workforce and individual levels.

Table 2: A summary of the major challenges limiting effective action to improve nutrition workforce capacity in Indonesia

<table>
<thead>
<tr>
<th>Level</th>
<th>Issues</th>
</tr>
</thead>
</table>
| System | - Limited leadership and coordination across government limits the effectiveness of action with too much emphasis on acute services and not enough attention on primary prevention  
- Limited appreciation of the scope of nutrition problems affecting the country  
- There is a disconnect between central, provincial, and district and health service delivery planning, budget allocation, and information transfer is use  
- The nutrition professional organizations are disorganised and underdeveloped, and limited by their leadership  
- The nutrition education system is disjointed and not obviously integrated with workforce planning. The divisions between vocational and academic training are out-date, unhelpful and divisive and limit career progression for some staff  
- A lack of clear nutrition service standards that reflect current needs limits                                                                                                                                 |

1 NOTE: This report is the joint product of consultants from the World Public Health and Nutrition Association (WPHNA) and Public Health Solutions, Ltd. (PHSL). Any views or opinions presented in the report are solely those of the authors and do not necessarily represent those of UNICEF Regional or Country offices, or of the European Union (EU), which funded the work.
| **Organisational** | • There is an uneven distribution of nutrition staff across provinces, provision does not match to needs  
• Best use is not made of existing staff, too much focus on administrative functions and acute treatments and not enough on community development and primary prevention |
|-------------------|------------------------------------------------------------------------------------------------|
| **Workforce**     | • There is inadequate and unreliable data available on the existing workforce, which affects planning  
• The workforce that is in place is underutilized and underperforming because of poor human resource stewardship and accountability |
| **Individual**    | • The level of access to Puskesmas services appears to be declining  
• Nutritionist role in Puskesmas is undervalued and underused |

This analysis has informed the development of the recommendations in the following section.

**RECOMMENDATIONS**

The determinants of nutrition capacity in Indonesia are numerous, varied and distributed across multiple sectors, systems and levels. This analysis using desk review, limited stakeholder consultants and SWOT analysis has identified at least 10 strategic priorities that are appropriate to consider, and that will address some of the key challenges identified.

The following 10 step staircase framework is proposed below to help illustrate the mix of strategies proposed to help build nutrition capacity in Indonesia over the short (2-4), medium (5 years), to longer (10) year period.

Some of the strategy recommendations (steps 1-10) to build capacity across the system can be piloted in the immediate short term. Structural changes to training and professional organisations needs to start now but will take longer to affect outcomes.

In the short term, a model or proof of principle needs to be developed and tested, to show how a District health system could support more effective working practices in the work in the puskesmas and posyandu. This modeling should:

- involve in-service training and re-organisation of health services;
- be rigorously evaluated for both process and outcome to develop the evidence-base to support further roll-out of those systems and structures across the health system;
- be undertaken in selected Districts with different local health burdens and challenges to explore how these local circumstances/factors affect impact on health.

In-service training needs to be prioritised to support new service and program implementation and to greater empower health professionals to develop problem solving capabilities in practice.

This approach will enable the development and refinement of health service architecture (nutrition service standards, role delineation, workforce continuing professional development, etc) with active engagement of relevant stakeholders proximal to the sentinel sites (the local university, local
branches of professional organisations, district office staff, puskesmas etc). This engagement will enhance “ownership” and sustainability of changes made (a key component of capacity building).
<table>
<thead>
<tr>
<th>Step</th>
<th>Strategy</th>
<th>Recommendation</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Nutrition Service Standards</td>
<td>Redevelop nutrition service standards (core functions) to reflect the type of services and work needed across the different modes of practice (clinical nutrition/diabetics, food service management, community nutrition, public health nutrition) to most effectively address nutrition service needs. This is a pre-requisite project to guide enhancement of both the nutrition education system and the nutrition service delivery within the health system.</td>
</tr>
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</table>
| 2    | Workforce development architecture and international benchmarking | Develop the nutrition workforce quality system architecture including:  
- Revision of and broad dissemination of job descriptions that reflect new service standards.  
- Further development of specific competency standards that reflect revised service standard implementation (competencies fit for practice)  
- Development of assessment tools/systems for graduate certification  
- Development of assessment tools/system for program accreditation  
Facilitate appropriate international benchmarking for workforce development architecture, particularly relevant to the scheduled ASEAN free trade agreement due in 2015 that will enable labour force mobility within ASEAN. |
| 3    | In-service training at many levels | Enable a systematic program of in-service training targeting D3 nutritionists in puskesmas, cadres in posyandu, agricultural extension workers and midwives. This in-service training should prioritize new services and programme implementation and empower health professionals to develop problem solving capabilities in practice. (e.g. measuring relevant NAP-FN targets). |
| 4    | Leadership development | Support nutrition leadership development programs targeting nutritionists within ministries, health services, academia and professional organisations. This activity should encourage international engagement, broadening of the leadership base across systems, organisations and geographical location. |
| 5    | Academic capacity building | Support academic capacity development via strategies such as:  
- Strengthening collaboration between academics re teaching methods, competency standards development, curriculum renewal etc. (via AIPGI)  
- Facilitating international engagement in nutrition conferences, academic exchange between universities outside Indonesia  
- Strengthening academic collaboration with ministries regarding intervention research |
<p>| 6    | Health service and intervention research | Support the development of nutrition intervention research and evaluation capacity (amongst nutrition practitioners and academics). |
| 7    | Partnerships | Encourage university: MOH (District &amp; Provincial level) collaborations for service evaluation, intervention research, work integrated learning (internships etc). |
| 8    | Investments in workforce growth | Advocate for further GOI investment in new nutritionist positions to meet nutrition security and health needs and to align recruitment to efficient service standards and community needs. Investments in workforce growth need to be implemented after or in parallel with greater stewardship and management of existing human resources. |</p>
<table>
<thead>
<tr>
<th>9</th>
<th><strong>Strengthening professional organisations independent of government</strong></th>
<th>Strengthen professional organisations representing professionalization and support needs of all sections of the nutrition workforce (D3, SI, dietitians, nutrition academics). The professional organisation supporting the emerging dietetic profession being a priority.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><strong>Stewardship</strong></td>
<td>Support the National Task Force for the SUN Movement in Indonesia (1000 HPK) to integrate multi-sectoral oversight and stewardship of national nutrition and food security action plans/policies reporting through the Presidents Office.</td>
</tr>
</tbody>
</table>

*For more detailed notes see section 7.*
To help give more children in Asia the best start in life, the European Union has teamed up with UNICEF to support a new initiative to tackle maternal and child undernutrition over four years (2011-14). The Maternal and Young Child Nutrition Security Initiative in Asia (MYCNSIA) is designed around four interrelated Result Areas of (1) Up-stream policy work regarding nutrition security, (2) Capacity building of decision-makers, service delivery personnel and communities, (3) Data analysis and knowledge sharing, and (4) scaling up of key proven interventions. MYCNSIA activities are implemented in five targeted countries of Bangladesh, Indonesia, Laos, Nepal and the Philippines. Through the MYCNSIA, UNICEF will work to improve child growth and development in Asia by improving nutrition security using inter-sectoral approaches. Ways will be sought to support capacity building initiatives in these countries through a regional approach.

2.1 The nutrition situation in Indonesia

Nutritional status in Indonesia has improved markedly in the decades leading up to 2000, to the point that UNICEF has concluded that Indonesia is likely to reach the nutrition MDG[1]. This progress has been attributed to a combination of economic growth, agricultural development, improvement in water and sanitation, and a community-based nutrition program. Indonesia’s old family nutrition program (UPGK) continues to be a model for community nutrition programs[5]. However, the prediction to achieve MDG(1) is being undermined by evidence of increases in malnutrition since 2005, the global financial crisis, poor nutrition program performance, and related workforce capacity deficits[2-4]. Progress on nutrition appears to have stalled[5]. Table 2 summarises the major progress and ongoing challenges relating to nutrition and health in Indonesia.

Table 2.1.1 : Progress and ongoing challenges relating to nutrition and health, Indonesia.

<table>
<thead>
<tr>
<th>Progress</th>
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<tbody>
<tr>
<td>Life expectancy at birth has risen from 63.5 to 67.7 for men from 1990 to 2010 (for women from 66.5 to 71.8)[6, 7]GBD2010. The GBD2010 measure of healthy life expectancy which takes account of life time morbidity and is a useful indicator of the burden on health care needs; for men in 2010 this is 58.7 and women 61.7 (9 and 10 years less than life expectancy).</td>
</tr>
<tr>
<td>Infant mortality has fallen from 68 deaths per thousand live births in 1991 to 34 in 2010 (varying from 19 to 74 across provinces). Under five mortality has also fallen over the same time period from 97 to 44 (province range 22-96). Maternal mortality has fallen from 390 in 1991 to 228 in 2010, but is still more than twice the MDG target of 102. The pattern of attribution of cause of death has changed dramatically in Indonesia from 1995 to 2007; whereas in 1995, 44.2 per cent of deaths were attributed to communicable diseases (CDs), and 41.7 per cent to non communicable diseases (NCDs), in 2007 the proportions were 28.1 and 59.5 per cent respectively for CDs and NCDs.</td>
</tr>
<tr>
<td>Protein-energy malnutrition – the prevalence of underweight among children under-5 years- decreased by a third since the 1980s to 27% in 2001</td>
</tr>
<tr>
<td>The prevalence of underweight among children under five has been reduced from 31 per cent to 17.9 per cent from 1989 to 2010 (MDG target 15.5), but there is a wide disparity between provinces, from the lowest 11.4% (Bali) to the highest 33.6% (East Nusa Tenggara).</td>
</tr>
<tr>
<td>The Prevalence of stunting has not changed between 2007 and 2010 and is currently 36%; the prevalence of</td>
</tr>
</tbody>
</table>
wasting is 13.6%[8], with continued wide disparity between provinces.

- The prevalence of micronutrient deficiencies has been reduced
  - By the early 1990s, severe vitamin A deficiency (VAD) declined to a level where it was no longer a public health problem[9]
  - The total goiter rate (TGR) also declined from 28% in 1990 to 10% in 1998. In 14 iodine deficiency disorder (IDD) endemic districts, TGR decreased further from 44% in 1996-98 to 25% in 2003[10].
  - Indonesia now has the highest coverage (85%) of iodine fortified salt use in South East Asia[1]; it is believed that iodine deficiencies disorders are now limited to a small number of districts in East Java, Bali, and southern Sulawesi where artisanal salt is produced[5].

Challenges

- Continuing improvement in nutrition has been threatened by decentralization of government, declining resources for nutrition, and increasing diversity in food intake but also increase of processed/packaged foods.
- In 2009, 14.4 per cent of the population had access to less than 1400 Kcal per day.
- A significant proportion of Indonesian infants are born at low birthweight (9%) and a growing number of children become malnourished between birth and their third birthday.
- There has recently been a slight upsurge in the percentage of children underweight. In 2000, more than a quarter of children were still underweight, and about 33% and 11% of children are stunted (a long-term malnutrition indicator) or wasted (a short-term malnutrition indicator).
- Child stunting rates have not declined in Indonesia; in 2007 the stunting rate was at 36.8 and in 2010 it was 35.6 per cent of young children (7.6 million children under five). There are large variations when national rates are disaggregated by provincial, age of mother, or by level of education[6].
- Regional comparisons show that prevalence of underweight and stunting in Indonesia is roughly similar with those in Myanmar, Philippines, and Viet Nam[1]. However, Indonesia has a high wasting prevalence relative to its under-five mortality rate in comparison, implying a more urgent problem of short-term malnutrition.
- Between 2002-3 and 2007 there was a deterioration in breastfeeding practices[5]...thought it seems that exclusive BF rate has improved between 2007 and 2012 (based on the preliminary DHS 2012 data)
- Complementary feeding is often inadequate with respect to frequency, quantity, consistency, and nutritional quality. The 2007 DHS survey found that only 41% of children 6-23 months were fed “appropriately”. There are traditional high nutritional quality foods available in rural Indonesia for infants (tempeh and tofu; leafy greens; oil) but such excellent local foods may be supplanted by nutritionally inferior purchased/packaged or ultra processed foods or by public food supplementation commodities[5].
- Maternal nutrition is also poor. The IFLS 2000 found that 14% of women reproductive aged were chronically energy deficient (CED) (BMI under 18.5) and the 2007 DHS survey found that 2.2% reported night blindness. Night blindness during pregnancy is alarmingly high in W. Sumatra (3.9%), Bangka Belitung (4.7%), E. N.T. (5.9%) and S. Kalimantan (4.2%). IFLS (2000) found that 18.8% of women 15-49 years of age were anemic (Friedman, et al 2006) whereas the 2008 Basic Health Survey (cited in “MDG 1 Target 2”) found that 24% of pregnant women were anemic even though 80% of pregnant women were said to receive iron supplements (Friedman, 2006). In 2007 79% of women reported receiving iron supplements during their previous pregnancy and 29% reported receiving the recommended 90 or more tablets[5].
- In particular, CED is more prevalent among younger women between 15 and 30, who are responsible for about 70% of child births, and is possibly an important risk factor for low birth weight.
- Some micronutrient deficiencies have been largely eliminated while others persist. Iron deficiency is clearly the most widespread nutritional problem. The IFLS 2000?? found that nearly 70% of children 1-2 years old were anaemic and undoubtedly a higher proportion of younger children would be anaemic. Over half (53%) of pre-schoolers over one year of age were anaemic. The 2007 DHS survey found that 70% of pre-schoolers had consumed iron rich foods but there are no data on coverage of iron supplementation programs for
Nutritional outcomes and service utilization vary greatly by socioeconomic background, geographic location and level of the health system.

- Inequalities in service utilization by educational attainment are evident
- Nutrition conditions vary widely across districts in Indonesia and there is significant variation in nutritional status across districts. e.g. District-level prevalence of underweight among children under-5 years ranged from 3% to 81%, while the national average was about 27% in 2007.
- Nutrition service utilization also varies across provinces. Antenatal iron supplementation coverage ranged from 58% in Central Kalimantan to 98% in DI Yogyakarta. Vitamin A supplementation among children 6 to 59 months varied from 51% to 80%. Adequately iodized salt use at home ranged from 19% in NTB to 96% in Jambi (Ref?).

- Chronic disease prevention is becoming an additional nutritional challenge in Indonesia.
- Overweight and associated chronic diseases have increased in Indonesia. About 21% of women between 15 and 50 were estimated to be overweight in 2000. The overweight prevalence is substantially higher for those in the 30s and 40s and for those in urban areas, indicating an emerging need for chronic disease prevention in these populations. Prevalence of central obesity of population more than 15 years old in 2007: Male 7.7% (more than 90 cm) and female 29.0% (more than 80 cm). Urban 23.6% and rural 15.7%. Quintile 1 (poorest) 15.0% and quintile 5 (richest) 23.2% [8]. 14.1 per cent of women aged 45-49 years are classified as overweight-stunting.
3. NUTRITION CAPACITY DEFINED

Any consideration of existing nutrition capacity must be grounded in clarification of what “capacity” means and how it is conceptualised by stakeholders. The following table illustrates different definitions of capacity from the literature related to health sector.

<table>
<thead>
<tr>
<th>Capacity defined</th>
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<tbody>
<tr>
<td>• The cultivation and use of transferable knowledge, skill, systems and resources that affect community and individual level changes consistent with public health-related goals and objectives[11].</td>
</tr>
<tr>
<td>• System-wide increases in capacity to meet stated objectives whether through increased skills, improvements in information flow or through increases in resource acquisition[12].</td>
</tr>
<tr>
<td>• An ongoing process by which individuals, groups, organisations and societies increase their abilities to perform core functions, solve problems, define and achieve objectives, and understand and deal with their development needs in a broad context and sustainable manner[13].</td>
</tr>
<tr>
<td>• A continual process of improvement within an individual, organisation or institution with the objective of maintaining or improving the health services being provided[14, 15].</td>
</tr>
<tr>
<td>• The process by which people gain knowledge, skills and confidence to improve their own lives[15].</td>
</tr>
<tr>
<td>• As enhancement of the skills of people and the capacity of institutions in resources management through education and training[16].</td>
</tr>
<tr>
<td>• An approach to development based on equity, empowerment, and participation and works to strengthen communities, whether grassroots, inter-organisational partnerships, or networks of agencies, to organise and act to achieve their goals[17].</td>
</tr>
<tr>
<td>• Capacity building is an approach to the development of sustainable skills, structures, resources and commitment to health improvement in health and other sectors to prolong and multiply health gains. It increases the range of people, organisations and communities who are able to address health problems (e.g. obesity), and in particular, problems that arise out of social inequity and social exclusion[18].</td>
</tr>
</tbody>
</table>

The more comprehensive definitions (in bold above) emphasise that building capacity involves more than just training and “upskilling” the workforce, but is instead multi-sectoral, across systems and different jurisdictions within these systems and how organisation and individual factors effect capacity.

If nutrition capacity is most simply defined as the ability of the population to achieve its nutrition related health objectives, then a more sophisticated conceptual framework for nutrition capacity assessment is required.

The following conceptual framework helps situate key determinants of capacity in the nutrition system that provides a basis for critical analysis of existing capacity.
Figure 3.1: Nutrition System Capacity

STEWARDSHIP
- Regulations
- Standards
- Priorities

RESOURCES
- Mobilisation
- Pooling
- Distribution

SERVICES
- Action
- Delivery
- QA

WORKFORCE
- Training
- Organisation
- R&D

Source: www.GlobalNutritionSeries.org
4. METHODOLOGY

This study explores and assesses nutrition capacity in Indonesia across system, organisational, workforce and individual dimensions. A rapid assessment methodology has been employed, including:

- desk review of available and relevant white and grey literature
- consultative interviews with key informants and stakeholders (over a 7 day period in Jakarta Dec 10-17, 2012), followed by
- critical analysis (including SWOT) of available evidence using conceptual frameworks for capacity assessment derived from the literature

Numerous assessments of Indonesia’s nutrition situation and related capacity for action have been completed in recent years.

Primary published sources of intelligence used in this analysis include white and grey literature sources, including:

- Indonesian Landscape Analysis 2010[19]
- Indonesia Nutrition workforce Country Case Study[22]
- The National Action Plan for Food and Nutrition (BAPPENAS)[23]
- Key published literature relating to nutrition capacity in Indonesia[2, 3, 24].

A list of key stakeholders interviewed is included in the appendix. Interviews were largely unstructured with questions guided by stakeholders jurisdictional responsibilities and related issues. All stakeholders were asked a standard question to describe what they considered to be the factors limiting or enabling action on nutrition.

The following levels where used to help categorise and conceptualise the determinants of nutrition capacity.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description (from[25])</th>
</tr>
</thead>
<tbody>
<tr>
<td>System level</td>
<td>The food and nutrition system spans many sectors including health, agriculture, the food import/export, manufacturing and distribution systems, food service and marketing, amongst others. In this review, the systems analysis focused primarily on immediate systems/sub-systems with most effects on nutrition capacity, including:</td>
</tr>
<tr>
<td></td>
<td>- Health</td>
</tr>
<tr>
<td></td>
<td>- Education</td>
</tr>
<tr>
<td></td>
<td>- Planning and Development</td>
</tr>
<tr>
<td></td>
<td>- Agriculture</td>
</tr>
<tr>
<td></td>
<td>System level analysis includes the resources, actors, and institutions related to the financing, regulation, and provision of sector specific actions. The system is</td>
</tr>
</tbody>
</table>

Indonesian nutrition capacity assessment
<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational Level</td>
<td>This dimension focuses on the structures, processes, and management systems that enable specific nutrition-related organizations to function smoothly and adapt to changing circumstances. It includes the human, physical, and knowledge resources of an organization and the processes employed to transform these resources into services or products. Capacities relevant to organizational performance include, <em>inter alia</em>, strategic planning, financial management, information management, logistics systems, communication networks, or human resource development and management.</td>
</tr>
<tr>
<td>Workforce Level</td>
<td>This dimension encompasses the collective body of individuals who work in the health system in a variety of technical, managerial and support areas. Human resource capacities relevant to system performance and outcomes may include clinical judgement and techniques, diagnosis, treatment, management practices, such as written record-keeping and supervision; or money management, problem solving, or communications skills.</td>
</tr>
<tr>
<td>Individual Level</td>
<td>Another dimension of capacity that is key to building a sustainable nutrition and health system is the individual (or beneficiary) of the nutrition/health services. The participation of individuals in health care can take many forms at the health system, organizational, or health personnel level. For example, individuals can help increase the quality of services by giving health personnel important information about their previous health problems or demanding higher quality of care. Increasingly, individuals either alone or as part of their community, are playing an important role in shaping the system through participation in health center management committees, lobbying decision-makers and using the media or other forms of advocacy to demand that the system respond to their needs. Finally, individuals and their communities also influence health outcomes and the need for health care through their own behavior (Goodman, et al, 1998). Early recognition of illness, self-treatment, and healthy living are paramount to individual health outcomes.</td>
</tr>
</tbody>
</table>

5. RESULTS

5.1. System level capacity

At the system level, 4 main sectors/government ministries were assessed as being most critical to nutrition capacity, including:

- The Ministry of Health (MOH)
- The Ministry of Education and Culture (MOE&C)
- The Ministry of National Development Planning (BAPPENAS), and
- The Ministry of Agriculture (MOAg)

(Note: It is difficult to ascertain who has multi-sectorial responsibility for the food and nutrition system)

5.1.1. Policy mandates

- The legal basis of food and nutrition programme policies is embedded within the Law No, 17/2007 on National Long-Term Development Plan (RPJPN) 2005-2025. The RPJMN (2010-2014) has two outcome indicators related to nutrition reduce prevalence of undernutrition to 15.5% and stunting to 32%.

- In 2011, the Ministry of National Planning and National Development Planning Agency has developed the National Action Plans for Food and Nutrition (NPA-FN) 2011-2015. To address the challenges the plan has five pillars:
  1. improving community nutrition focus to pre-pregnant, pregnant women, and children;
  2. increasing accessibility to diversified foods;
  3. improvement of quality control and food safety;
  4. improvement of clean and healthy behaviours; and
  5. strengthening food and nutrition institutions.

- This plan acknowledges that a comprehensive approach to nutrition to address under and overnutrition is required, yet very little in the action plan addresses issues of over nutrition and chronic disease (double burden)

- Specific evaluation measures against strengthening food and nutrition institutions include:
  - increased number of districts/municipalities having established food and nutrition institutions; and
  - increased number of Diploma 3 (III) working at HC and sub-district field agriculture educators.

- To further focus and prioritise actions, provinces have been categorised based on their prevalence of stunting (above or below 32%) and energy sufficiency (above or below 14.47% of the population having less than 1400 Kcal/person per day) into four strata:
  1. those with low stunting and adequate energy availability ($S_1$-least vulnerable provinces);
  2. those with low stunting and low energy availability ($S_2$);
  3. those with high stunting and adequate energy availability ($S_3$); and
  4. those with high stunting and low energy availability ($S_4$- most vulnerable provinces).

- The five pillar strategies have then been refined to identify key strategies within each stratum. In the worst affected provinces (stratum 4), there are more detailed strategies in each of the five pillars. For example, to strengthen institutionalization of food and nutrition the strategies include: improve partnerships and multi-sectoral collaborations; intensively monitoring implementation of programmes; updating job descriptions of human resources to fulfil
resources gaps; and improve advocacy. For each activity the NPA-FN has developed indicators and targets with budget allocations.

5.1.2 The Health System

5.1.2.1 Institutional responsibilities[5]

- Indonesia has a two-part institutional structure for nutrition, having a dedicated group in BAPPENAS (at national level), the planning commission, which does planning and budgeting, and Directorate of Community Nutrition (within Dept. of Community Nutrition, Maternal and Child Health within Ministry of Health), which is in charge of technical guidance and support. Each of these entities has a provincial and district counterpart which guides (provincial) and implements (district) programs.
- There are supposedly nutrition sections at the central and provincial level but little budget to work with and many districts lack the appropriate staff complement. Some districts no longer have a dedicated nutrition section and one (NTT) has two separate and overlapping sections. Nutrition is but one of many roles and responsibilities of provincial health offices and not one of the priority areas that receives budget[2]. At the district level nutrition is one of six major health programs but lacks staff and financial resources.
- According to Friedman et al[2], one of the problems with the shared responsibility for nutrition between planning and health is that the planning is done without good data on the nutritional status and program performance. While in the old days the SKDN system would have provided information on program performance, this is apparently lacking today.
- The work of nutrition in Indonesia can be categorised according to two main levels of work:
  - Program level – usually centrally/provincially planned community-wide interventions
  - Service delivery - local level delivery of food services, nutrition and dietetic services including implementation of components of broader nutrition programs.

5.1.2.2 Nutrition Programs

- Nutrition has been included as an important element in the five-year plans since the second Repelita in 1974. In recent national plans, nutrition has become buried in health and not accorded high level attention[5].
- The operational strategy of Community Nutrition 2010-2014 prioritises its objectives to addressing under-nutrition. This is reflected in current nutrition service priorities with limited/no focus on the non-communicable burden of disease on the immediate horizon associated with the nutrition transition.
**Micronutrient deficiency programs[2, 5]**

In terms of micronutrient deficiency control there are three general strategies:
- to target micronutrient supplements to endemic area or vulnerable populations,
- to fortify micronutrients in the diet, and
- to improve diets containing micronutrients.

Indonesia pursues each of these strategies to at least a limited extent, however much of the focus in micronutrient deficiency control centres on supplementation programs though some efforts have been undertake on food fortification (e.g. salt and flour).

**Table 5.1.2.2.1: Summary of micronutrient supplementation programs**

<table>
<thead>
<tr>
<th>Micro-nutrient</th>
<th>Program description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Iron</strong></td>
<td>A major program for iron deficiency control is the antenatal iron supplementation program, which aims to cover all pregnant women who are reached through Puskesmas and Posyandus. Distribution of iron syrup to children under-5 years was implemented in the eastern part of the country from 1996[2], but has stopped in recent years. Post-partum early women receive IFA supplementation for several months after delivery.</td>
</tr>
<tr>
<td><strong>Vitamin A</strong></td>
<td>Indonesia has had in place for decades a successful vitamin A supplementation program which has virtually eliminated severe vitamin A deficiency. Currently it distributes through Posyandu and bi-annual campaigns two megadoses of vitamin A per year to preschool children and a single megadose to postnatal women and it promotes consumption of vitamin A rich foods. Coverage in 13 provinces in 2000 was estimated to be 68.5% for vitamin A supplementation of children and 42.5% supplement coverage for postnatal women [2]. The 2007 DHS survey also found that 68.5% of preschoolers had received any vitamin A supplement although 87% had consumed vitamin A rich foods within the previous 24 hours[5].</td>
</tr>
<tr>
<td><strong>Iodine</strong></td>
<td>Universal salt iodization is the major intervention strategy for iodine deficiency control. Until 2010, iodized capsule distribution in iodine deficiency disorder endemic areas was targeted at women of reproductive age and young children[2], but this was stopped recently. In the 2000 survey, 84.8% of homes used iodized salt but only 82% of the salt was deemed to be adequately fortified[5]. IDD prevalence survey and mapping in the early implementation of IP-GAKY project (1997/1998) showed that the proportion of households consuming iodized salt with adequate fortification is 62.1%. 2003 survey at the end of IP-GAKY Project showed that the consumption of salt iodized has increased to 73.26%. (MOH 2004. National Action Plan of IDD control program continuity). In 2007, data from the national survey (Riskesdas) have shown that 62% of households used iodized salt.</td>
</tr>
</tbody>
</table>

**Community based nutrition programs**

Indonesia has had community based nutrition programs for over forty years and it has included nutrition in the national policy document for almost the same period of time. The Family Nutrition Improvement Program (UPGK), started in 1974, is widely considered to be a model for community
based nutrition programs. As detailed in the following summary from McGuire[5], these programs have deteriorated since the mid 1980s.

The Family Nutrition Improvement Program (UPGK)

The Family Nutrition Improvement Program (UPGK), started in 1974, is widely considered to be a model for community based nutrition programs. It focused on monthly weighting of children under five, nutrition education, home food production, promotion of birth spacing, nutritional “first aid” (vitamin A capsules, iron folate tables, oral rehydration salts), referral of serious problems, provision of seeds for food production, and rehabilitative supplementary feeding.

One of the most useful innovations of UPGK was the SKDN monitoring system (S is for the total target population, K is the number of the eligibles with a growth card, D is the number attending the last growth monitoring session, and N is the number gaining weight). Using a combination of SKDN indicators one can supervise the program, determine coverage, assess quality of services, and assess impact. The program had high level political support. Some particular strengths of the UPGK were that provincial and district level coordination boards were set up to oversee the program and that a number of ministerial level entities (health, family planning, agriculture, and religion) were involved in service delivery. UPGK was complemented with a similar community health program (PKMD) in which communities self-surveyed, diagnosed problems, and devised interventions. PKMD also included nutrition and food production. These programs were mutually reinforcing and built on the tradition of community self-help.

Since 1986, when UPGK was integrated with a number of health services into the posyandu, it has lost status and effectiveness as (some say because) it became more formalized as a health program and the family planning and food production components were dropped in most areas, although the program persists in a few areas. In particular it is notable that the goal of Posyandu is explicitly the reduction of infant and maternal mortality (not malnutrition). As Indonesia was departing from UPGK, however, the model was being expanded and improved in other countries (most notably Honduras, Nicaragua, and Peru).

In recent years there has been much criticism of the nutrition component of posyandu, the successor to UPGK, because nutrition status has failed to improve, utilization of growth monitoring has fallen, and performance measures suggest poor implementation even as the cost has increased. Many have blamed the decentralization of the health system for posyandu’s weakness[2].

The weaknesses were apparent, however, long before decentralization took place (Soegianto, 2008). In fact previous evaluations pointed out exactly what was wrong with the program but apparently efforts were not taken to remedy identified problems. At present MoH funds are channelled through the posyandu and local foods are purchased and used for cooking sessions. Fortified flour is kept for use in emergencies only.
Breastfeeding and complementary feeding promotion

As early as 1985 Indonesia had begun to implement portions of what came to be known as the International Code on the Marketing of Breastmilk substitutes. As of 2004, IBFAN found that Indonesia’s regulation of the baby formula industry was incomplete and inadequately enforced. They found multiple examples of formula companies providing inducements to health workers and mothers and engaging in deceptive and persuasive marketing practices. Anecdotal evidence suggests that many problems with enforcement remain. UNICEF has recently introduced a new training program for midwives on breastfeeding (“40 hour counsellors”) which appears to be both popular and effective.[5]. Lately, UNICEF has also introduced a comprehensive training module which encompasses maternal nutrition, breastfeeding and complementary feeding. Targeted populations are nutritionists, midwives and community cadres.

5.1.2.3 Localised Nutrition Service delivery

Nutrition services in Indonesia span the service delivery spectrum from upstream prevention services to downstream curative services, in both the public and private health systems, including the work of NGO’s.

The majority of actual nutrition service delivery by the MOH occurs at the District and sub-district level:

- **Hospitals**: most at district level (although some Provincial and Central level hospitals)
- **Puskesmas**: Community health centre services: with some (~25%) that include an in-patient facility. Sub-district level (1 per ~30,000 population).
- **Posyandu**: Community managed (cadres) growth monitoring and nutrition education.

Nutrition program planning and support is provided from District, Provincial and Central Office level. The extent of private practice clinical service delivery and small business activity is unknown. Nutrition service delivery in the public system (MOH) in reality is provided by a range of personnel (Doctors, Nurses, Midwives, etc), particularly in Puskesmas because of the limited employment of nutritionists at District level (only ~35% of the 8737 Pukesmas in Indonesia employ a nutritionist). This is not inconsistent with most countries, but is particularly exaggerated in the Indonesian context. As a result, the quality and quantity of nutrition service delivery in the Indonesian system is likely to be sub-optimal, and is likely to continue to deteriorate, without building the nutrition leadership/stewardship capacity usually attributed to the development of a specialist workforce tier[26].

Nutrition services within the MOH are guided by numerous practice and service guidelines including:

- Guideline for hospital nutrition services, released by Direktorat Gizi (Directorate of Nutrition) MOH
- Guideline for Nutrition therapy team, released by Ditjen Yanmedik (Direktorat Jenderal Pelayanan Medik - Directorate General of Medical Care, MOH
- Service standard for Clinical nutrition released by PP PDGKI, approved by KKI

These guidelines appear to under-state the role and function of nutritionists/dietitians in the health system.

This limited distribution of nutrition personnel is attributed to:

- budgetary constraints limiting civil service workforce growth.
- A recent Presidential decree (INPRES 3/2010) regarding prioritisation of health manpower recruitment that doesn’t rate nutritionists as a priority, and
- District level control of prioritisation that passes over recruiting nutritionists in favour of health generalists (eg. doctors and nurses). [2]

Table 5.1.2.3.1 summarises the different nutrition service categories and level in Indonesia.

**Table 5.1.2.3.1: Nutrition service description at different tiers of the health system**

<table>
<thead>
<tr>
<th>Level</th>
<th>Sector</th>
<th>Setting</th>
<th>Service description</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>Public</td>
<td>MOH</td>
<td>Program planning &amp; evaluation, resource allocation</td>
<td>Contested responsibilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BAPPENAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provincial</td>
<td>Public</td>
<td>Provincial Office</td>
<td>Program planning &amp; Evaluation</td>
<td>Some questions about capacity of nutrition workforce at these levels re program development, management and evaluation[2].</td>
</tr>
<tr>
<td>District</td>
<td>Public</td>
<td>District Office</td>
<td>Program planning &amp; Evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>District Hospital</td>
<td>Clinical dietetics, food service management</td>
<td>Appear under-resourced (heavy staff: patient ratios), variable service quality and reach, contested responsibilities in hospitals with Clinical Nutrition Specialists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puskesmas</td>
<td>Clinical dietetics, community nutrition</td>
<td>Nutrition program and service delivery has deteriorated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Posyandu</td>
<td>Community managed growth monitoring and nutrition education (cadres)</td>
<td></td>
</tr>
<tr>
<td>Private practice</td>
<td>Private</td>
<td>Private Practice clinics</td>
<td>Clinical dietetics</td>
<td>Difficult to estimate number of graduates who have been employed in this sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private hospitals</td>
<td>Clinical dietetics, food service management</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small business enterprises</td>
<td>Difficult to describe/ unknown at present</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Industry</td>
<td>Health marketing, product development, brand management, research and development</td>
<td>Very limited market for nutritionists at present (most demand for food technologists</td>
</tr>
</tbody>
</table>
5.1.2.4 Donor and NGO Programs

There are a range of programs and services being delivered via donor and NGOs, as summarised in the following table from McGuire[5]. The manpower attributed to and required by these programs is difficult to identify, however any forward planning for nutrition workforce development and service delivery should include Donor and NGO program delivery in its considerations.

Table 5.1.2.4.1: Donor and NGO programs summary

- The Asian Development Bank (ADB) ran a Nutrition Improvement through Community Empowerment (NICE) program until December 2012 that was aimed to strengthen posyandu growth promotion as a means of social mobilization. There was considerable local scepticism about the utility of the NICE program, although no evaluation data re available at the time of writing this report. ADB also support water services and health.
- The UNICEF nutrition program concentrates on breastfeeding and complementary promotion, maternal nutrition, micronutrient supplements, and treatment of severe acute malnutrition.
- Local NGOs are active in fortification (KFI) and a number of initiatives.
- International NGOs that have nutrition programs in Indonesia including CARE, Helen Keller International, Catholic Relief Services, World Vision, Oxfam, Mercy Corps, Islamic Relief, and Save the Children.
- The presence of NGOs in Indonesia is somewhat lower than other countries due to the special history and culture of the country. [5]

Nutrition Workforce Continuing Quality improvement

1. Note that the Head BPDPDSMK in the MOH (responsible for health workforce CPD) emphasised the priority for investment at present was upskilling the midwifery workforce (~30,000 practicing midwives considered unfit for practice) to address perinatal mortality. Budget allocation for this purpose only adequate to train up 300 midwives (<1 % of need). Nutrition workforce CPD investments are unlikely given current priorities and resourcing.
2. There appears no system level incentives to encourage the existing workforce to invest in their on CPD rather than rely on the MOH via BPDPDSMK, although with health practitioner certification being implemented it is possible to link certification with evidence of CPD investments by the individual practitioner. The capacity of the university and/or the professional associations sector to provide CPD is limited and needs development. There appears to be a need to structurally shift the cost of workforce CQI from the employer back to the employee, facilitated by fee for service CPD delivery by professional and educational organisations (PERSAGI?, Universities).
Summary: Challenges with Existing nutrition services

Indonesia faces a diversity of nutritional health challenges, including continuing the progress on malnutrition and early intervention to avoid the huge burden of disease associated with the epidemiological transition currently underway. The need for nutrition services in Indonesia, delivered by a competent and well resourced workforce, is great and currently inadequately met.

In order to focus efficient workforce development to support this service and program delivery, nutrition service standards for the Indonesian health system need to be developed that:

- Reflect analysis of current (and emerging) population needs
- Codify and clarify the core functions of the nutrition workforce in each mode of practice
- Realise the full utility of professional nutritionists and dietitians as drivers and leaders of nutrition service and program delivery,
- Are mindful of resource limitations in the Indonesian context and maximise the return on investment (health gain) in workforce development/resourcing.

5.1.3 The education system

History

- The first Nutrition and Dietician Academy in Indonesia was established in 1953 with the effort from Dr Poorwo Soedarmo. This institution was frequently changed its name, started in 1959 as Akademi Ilmu Gizi (Nutrition Science Academy) then Akademi Pendidikan Nutrisionis (Nutritionist Education Academy) and in 1966 became Akademi Gizi (Nutrition Academy). Graduates received a BSc degree.
- In 2000, with the establishment of Health Polytechnics, these academies became Department of Nutrition and graduates received the AMG degree (Ahli Madya Gizi). This institution has produced many of the prominent nutrition experts in Indonesia today, with its graduates spread across several organisations, educational institution, research, private sector and NGOs in Indonesia.
- The second nutrition education institution in Indonesia was started in Institut Pertanian Bogor (Bogor Agriculture Institute) in 1968, a six-year program specializing on Food and Nutrition. In 1973, a four-year program was initiated to produce Agriculture Engineer majoring in Nutrition. In 1976, it became Department of IKKP (Ilmu Kehidupan Keluarga Pertanian = the science of Agriculture Family Living). In 1981, it changed to Community Nutrition and Family Resources (GMSK=Gizi Masyarakat dan Sumberdaya Keluarga). In 2005, the curriculum was developed, capturing both major and minor, and Community Nutrition Department with nutrition major for human nutrition and community nutrition. This field embraces agriculture, food, nutrition and health. The degree is SGz (sarjana gizi). IPB also develops master and doctoral program on nutrition.
- The third nutrition education institution in Indonesia was RCCN (Regional Center for Community Nutrition SEAMEO Tropmed-PH (South East of Asia Minister of Education Tropical Medicine and Public Health) which conducted a diploma education with the title of DCN (diploma of community nutrition), master and doctoral program with the participants from ASEAN countries. The graduates from this institution pioneered several nutrition education programs across many Facultis of Medicine and Public Health in Indonesia. In 2010, RCCN was changed to Regional Center for Food and Nutrition.
In 1983 several Faculties of Public Health established a new program with the title of SKM (Sarjana Kesehatan Masyarakat – Undergraduate of Public Health or Community Health majoring on community nutrition. The credit component for nutrition subjects in these public health programs varies. Currently, many programs on public health have a community nutrition program.

In 2001 after Academy of Nutrition changed from academic degree (BSc) to vocational diploma as D3, the senior lecturers of nutrition from the seven educational institutions namely IPB, UI, UGM, UNDIP, UNIBRAW, UNHAS and Department of Nutrition of Polytechnic Jakarta established Group of Indonesian Nutrition Sciences Development. The goal was to prepare S1 or undergraduate nutrition (SGz – Sarjana Gizi) education. After working for two years, in 2002 the group composed core curriculum and core competence in S1 nutrition education based on the experience of academy of nutrition prior to 2000 with referred to nutrition education in foreign countries especially the U.S., Australia and the Philippines. SGz education was started in UGM in 2003, followed by UNDIP (Diponegoro University), UNHAS (Hasanuddin University), UNIBRAW (Brawijaya University), IPB (Bogor Agricultur Institute), UEU (University of Esa Unggul) and UI (University of Indonesia).

As a continuation of the SGz program, the nutrition profession has developed with the degree of Dietitian. At present only one University (UGM) conduct this program since 2007.

In 2008, the professional specialisation in nutrition was expanded to medical doctor specializing in clinical nutrition (only UNHAS run this program).

A multi-level system of professional workforce education

The Indonesian education system recognises three separate levels of nutritionist higher education administered by different ministries/institutions including:
- Vocational [MOH]
- Academic [MOE&C], and
- Professional [Professional bodies]

This delineation and contested responsibility creates numerous inefficiencies, undermines quality of education and is at odds with an integrated health professional education in universities evident in other countries which reformed higher education at least 30 years ago [under Ministries of Education rather than Health and usually conducted in partnership with the professions and health practitioners].

Why does the Ministry of Health have health workforce education in its portfolio responsibilities?

Most consulted on this question indicated that the Diploma program that evolved within the MOH administered polytechnics is a historical artefact of the initial need to quickly develop nutrition personnel to meet MOH service delivery needs. It appears that conflicts of interest regarding budget control and influence currently limits reforming the health professional education system to be within the University sector and integrated with professional education and certification (as in most developed countries). Whilst this split system continues, nutrition education is likely to be constrained by inefficiencies. The new AQF and HPEQ2 and Education Act will help dismantle the contested responsibility for quality in favour of the MOE&C.
<table>
<thead>
<tr>
<th>Table 5.1.3.1: Summary notes of different training pathways</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level</strong></td>
</tr>
</tbody>
</table>
| Vocational | • The D1 and D3 programs at MOH were initially started as a crash program to meet the need for nutrition workforce  
• Dissatisfaction with status of Diploma relative to perceived level of training amongst graduates  
• D level training of nutritionists the responsibility of the Polytechnics under the MOH.  
• Started with D1, now largely extinct (Still some D1 graduates in workforce)  
• D3 the most common program of study (estimate of ~19,000 graduates since 1952).  
• 2008 Competency based curriculum developed by academic consensus for D3 introduced (variable application to date)  
• MOH sets quotas on student intakes into D3 Nutrition programs (formally 40/year but in practice 80-100/year for A Polytechnics under PPSDM-MoH and Local Government owned).  
• ~2000 D3 Nutrition graduates per year unconfirmed graduate workforce uptake and destination  
• 33 Health polytechnics in Indonesia, with 26 offering D3 Nutrition programs |
| Academic | • S1 Nutrition programs informed by curriculum developed by KIGI : Nutrition Education Collegium) and AIPGI.  
• 9 Universities with S1 Nutrition programs |
| Professional | • Recent move to professionalization of nutrition as illustrated by:  
  o Development of clinical nutrition specialisation within medical workforce (n=173, 121 in Jakarta/Java) delivered by 1 university (Unhas)  
  o Moves to development of registration system for dietitians (DTR and RD credentials) in collaboration with PERSAGI |

Figure 5.1.3.1 summarises the existing study-career pathways evident in the Indonesian context.
Figure 5.1.3.1: Nutrition study and career pathways.
### Table 5.1.3.2: Different nutrition education pathways

<table>
<thead>
<tr>
<th>Type</th>
<th>Level</th>
<th>Nomenclature</th>
<th>Credential</th>
<th>Responsible</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational</td>
<td>D1</td>
<td>Pembantu Ahli Gizi</td>
<td>MOH</td>
<td>MOH/MONE</td>
<td>Artifact</td>
</tr>
<tr>
<td></td>
<td>D3</td>
<td>Ahli Madya Gizi</td>
<td>AMG TRD#</td>
<td>MOH/MONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D4</td>
<td>Sarjana Sains Terapan Gizi</td>
<td>SSTG</td>
<td>MOH</td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>S1</td>
<td>Sarjana Gizi</td>
<td>SGz</td>
<td>MOH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
<td>Dietitian</td>
<td>RD#</td>
<td>Nutrition collegium</td>
<td>S1 Nutrition + 900 hrs Dietetics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical Nutritionist</td>
<td></td>
<td>Medical Council</td>
<td>S1 Medicine + 3 yrs specialization (Collegium)- Council of Medicine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community Nutritionists</td>
<td>SKM</td>
<td>Community Nutrition collegium</td>
<td>D3 + 2yrs Nutrition in Schools of Public Health</td>
</tr>
</tbody>
</table>

# Credential only after competency based examination/assessment- TRD and RD credentials still being developed

Note: Many D3 graduates with clinical experience call themselves dietitians

- The Indonesian Qualifications Framework (IQF) and associated legislation (being prepared for introduction) will enable a pathway for the many D3 graduates into S1 qualifications and associated career pathways. This law will apparently supersede previous laws that limited D>S progression.

**Clinical Nutritionists in Indonesia: A case study of ‘ad hoc’ rather than strategic workforce development**

A relatively recent development has been the development of a medical specialisation in nutrition, involving a minimum of 3 years clinical training post medical graduation, offered by Unhas. To date over 170 graduates have been produced, most living and working in Jakarta. Consultations with members of the Collegium responsible for oversight of this program report that clinical nutritionists are needed because of the unique knowledge of patho-physiology medical trained doctors bring to clinical nutrition issues. The curriculum has been reportedly modelled on US Physician training in clinical nutrition. Students involved in this program reported on field visits that their role was in the diagnosis and prescription of dietetic interventions rather than the complete dietetic service model that includes patient education and counselling. This development raises a number of challenges and hard questions for nutrition workforce development, including:
• It perpetuates misguided professional bias that only medical graduates know pathophysiology etc (this is disputed, as many well trained dietitians in health systems throughout the world work independently of medical oversight)
• The role of the clinical nutritionist inadequately duplicates the role of a competent dietitian - few medical staff will have the time, competency or motivation to counsel patients in nutrition education.
• There is no evidence that clinical nutritionists trained in the existing Unhas system are any more competent than a competent dietitian. The emphasis should be on ensuring the development and maturation of dietetics as the professional discipline in clinical nutrition, independent of the subordinating effect of the medical profession.
• A clinical nutritionist is a much more expensive option than a dietitian - involving more than twice the time to train (8-9 years vs 4 yrs).
• There are inadequate numbers of medical staff in Indonesia - why divert doctors to nutrition careers that will provide only a partial dietetic service?

From: [20]

Summary: Challenges in nutrition training and career pathways

• The existing nutrition education system is disjointed and appears not to be integrated with workforce planning. This has been largely the result of contested responsibilities between the MONE (? Now MOE&C) and MOH, which undermines the effectiveness and efficiency of the educational system. This issue is currently being addressed by the introduction of the IQF and related legislation regarding responsibility for institutional accreditation falling under the MOE&C.
• The differentiation between vocational and academic education in the context of health professional workforce preparation is out-dated, inefficient, unresponsive and unsustainable.
• Reform of the tertiary education system to an integrated system for health professionals (academic + vocational in one system), that disentangles the MOH from administration and delivery of higher education is required (but politically unlikely).
• Existing career pathways for nutritionists have been blocked by existing regulations limiting transferability and progression between the vocational (D) and academic (S) programs.
• A holistic approach to strategic workforce development is required that limits (or at least discourages) ad hoc role duplication (such as the parallel development of dietitians and clinical nutritionists [medicine]).
• There is a need to develop consensus amongst stakeholders about the structure and nomenclature of the nutrition workforce required to most efficiently deliver required services and programs.
5.1.3.1 Regulations influencing quality improvement in nutrition education

- Previous analysis of the Indonesian nutrition education system in 2009/2010 identified various regulations that influence the production/supply end of the education system and others influence demand and workforce recruitment and retention. Combined, these regulations have a significant impact on the capacity of the nutrition workforce to make progress on nutrition in Indonesia. This has been partly addressed by a new education Act #12 that pulls quality assurance of education under MOE&C.

- Numerous Ministries with over-lapping/competing responsibilities relating to the quality of nutrition workforce preparation (refer Table 5.1.3.1.1).

Table 5.1.3.1.1: Summary of relevant legislation (Acts and decrees)

<table>
<thead>
<tr>
<th>Year</th>
<th>Act or Decree</th>
<th>Ministry</th>
<th>Key directives</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>National Education System Act</td>
<td>MONE</td>
<td>All programs of study to be accredited by BAN-PT by 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unaccredited programs illegal by 2012</td>
</tr>
<tr>
<td></td>
<td>Higher education Long term Strategy</td>
<td>MONE</td>
<td>Quality Assurance through:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- SPM-PT by university;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Self-based evaluation study program (EPSBED) by DGHE, and accreditation by BAN</td>
</tr>
<tr>
<td>2005</td>
<td>Lecturers Act</td>
<td>MONE, Dikti</td>
<td>Teachers of higher education (D3, D4 and S1) need to be Masters level qualified by 2014</td>
</tr>
<tr>
<td>2007</td>
<td>MOH Decree 374</td>
<td>MONE</td>
<td>Qualification of nutrition education (curriculum competency and curriculum) D3 and S1, and Standards of Profession for TRD and RD</td>
</tr>
<tr>
<td>2010</td>
<td>MOH Decree 161</td>
<td>MOHR</td>
<td>All manpower to have competency assessment leading to certification and registration</td>
</tr>
<tr>
<td>2010</td>
<td>Presidential Decree?</td>
<td>MOE&amp;C and MOWT</td>
<td>Regulation to be developed</td>
</tr>
<tr>
<td></td>
<td>Indonesian Qualifications Framework</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>New education Bill #12 (July 2012)</td>
<td>MOE&amp;C</td>
<td>Enabling transfer between D3- S1, increasing flexibility and alignment with IQF</td>
</tr>
</tbody>
</table>

BAN-PT - national accreditation of higher education
Accreditation of the Polytechnics and most of the local government academies are conducted by BPPSDM, MOH
MOWT – Minister of Workforce and Transmigration
SPM-PT (Sistem Penjaminan Mutu Akademik Perguruan Tinggi – Higher Education Quality Assurance System)
EPSBED (Evaluasi Program Studi Berbasis Evaluasi Diri - Self-based evaluation study program)
There are numerous leverage points within the quality assurance system relating to nutrition education in Indonesia (Figure 5.1.3.3.1). The following section describes and critiques the performance and potential of each quality assurance process.

Figure 5.1.3.3.1: Schematic representation of the Quality assurance system as it relates to nutrition education in Indonesia
Previous analysis of the factors influencing nutrition program delivery since decentralisation[2] has identified contested authority between the various levels of government as a major challenge for progress on nutrition in Indonesia. The result is:

- The opaque and overlapping responsibilities of those responsible for nutrition at all levels.
- Overlap between the central, provincial and district descriptions as they seem to be formulated by each level independently of the other levels.[2]

Previous reporting on the nutrition education system[20] has identified contested authority, overlap and in some cases duplication appears to also be evident in the nutrition and health workforce preparation system (vocational and higher education).
<table>
<thead>
<tr>
<th>Institution</th>
<th>Roles and responsibilities</th>
<th>Level of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directorate General for Higher Education (Dikti)</td>
<td>Education provider licensing</td>
<td>Central</td>
</tr>
<tr>
<td></td>
<td>Monitoring the process of education by EPSBED</td>
<td></td>
</tr>
<tr>
<td>LAM-PT</td>
<td>Program of study accreditation</td>
<td>Central</td>
</tr>
<tr>
<td>National Qualification Equalisation Agency</td>
<td>Qualification of professional workforce</td>
<td>Central</td>
</tr>
<tr>
<td>BPPSDM</td>
<td>To formulate the policy of human resources development and empowerment for health</td>
<td>Central</td>
</tr>
<tr>
<td></td>
<td>To improve the management of health human resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To maintain and improve the quality of health human resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To encourage the independency of health profession.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accreditation of the Polytechnics and LG owned academies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Establishment of MTKI/MTKP for graduate certification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>They are supposed to also developed standard of services in collaboration w/ DG of Com health and DG of Medical Services</td>
<td></td>
</tr>
<tr>
<td>Directorate General Community Health</td>
<td>DG of Com health is not involved directly in education QA.</td>
<td>Central</td>
</tr>
<tr>
<td>MTKI (Board of Examiners)</td>
<td>Graduate registration D3 to be TRD</td>
<td></td>
</tr>
<tr>
<td>National Development Planning Agency (BAPPENAS)</td>
<td>Planning</td>
<td>Central</td>
</tr>
<tr>
<td>Provincial Government</td>
<td>Program planning, implementation and evaluation</td>
<td>Province</td>
</tr>
<tr>
<td>District Government</td>
<td>Program planning, implementation and evaluation</td>
<td>District</td>
</tr>
<tr>
<td>Universities</td>
<td>Conducting learning-teaching process for S1 and dietician: conducting QA through SPM-PT.</td>
<td></td>
</tr>
<tr>
<td>Polytechnics</td>
<td>Conducting learning-teaching process for D3 and D4</td>
<td></td>
</tr>
</tbody>
</table>
Competency based approaches to workforce development

- Competency standards serve a number of workforce development functions, including providing a structure for the design and evaluation of curriculum that promote minimum standards, the assessment of individuals in terms of fitness to practice, direct continuing professional development and assist job evaluation and design. The utility of competency standards as a tool for workforce development is increasingly being recognised worldwide and competency-based education and training is now the mainstay of nutrition, dietetic and public health nutrition workforce development in most developed countries. Numerous competency standards have been developed and used in the USA, Canada, Australia, United Kingdom, so there is ample opportunity to adapt and contextualise competency standards for the Indonesian workforce.

- Consultations during this and earlier projects\[20\] indicate that competency lists have been developed for S1, D3, D4 programs - in part motivated by MOH Decree no. 374/2007. To date it is unclear to what extent these standards are being used by educational institutions to develop, review and evaluate curriculum and graduate assessment.

- Competency standards for dietitians (RD,TRD) are being adapted from the ADA (USA) for use in professional certification/registration (KIGI-Persagi) - however it is unclear how far this has developed.

- The Clinical nutrition specialization for medical doctors has standards for care and services, competency and curriculum standards that have been endorsed by KKI (Konsil Kedokteran Indonesia).

- Some work has been progressed on competencies via AIPGi following the 2010 World Bank pre study\[20\], now a major component of the HPEQ2 project as per recommendations.

Curriculum

- Based on a requirement of MoH Decree no. 374/2007, KIGI-AIPGI have developed a curriculum for nutrition undergraduate programs where each university must comply with 60% CSU (credit semester unit) of core curriculum, with the remainder made up of institution specific electives. Analysis of 6 of the nutrition study programs recognized by KIGI-AIPGI suggests that compliance with the minimum 60% core competency is variable and low, reducing the likelihood that there is a minimum competency standard being achieved amongst graduates across programs.
  - the percentage of core curriculum compared to total curriculum varies across universities: 46.6% (UNDIP), 53.5% (UI), 57.7% (IPB), 59.0% (UGM), 61.1% (UNHAS) and 66.7% (UEU). This percentage is based on the assumption that each university contribute to 7 CSU for internship and 144 total credit for S1 program. If the weighing of internship is lower (maximum of 8 CSU) and total credit is more than 144 CSU (minimum credit based on MONE regulation is 144 CSU), the percentage of core curriculum is lower than the percentage above.

- The requirement for practical placement in this required curriculum (maximum of 8 credits) appears inadequate to ensure enough exposure to experiential learning in the work setting (hospitals, puskesmas etc), to develop the competencies required for professional nutrition and dietetic practice. As a point of comparison, Australian dietitian training programs (4 year undergraduate) have a minimum of 400 hours hospital based clinical placement integrated with their university program, with an addition 600 hours placement in community and food service placements (>18 csu equivalents in placement).

- Previous analysis\[20\] of the curriculum standards against existing international consensus on standards\[29\] required for public health nutrition suggest significant deficits in analytical and
intervention management curriculum coverage (design, planning, implementation and evaluation). This is a concern given earlier observations that the capacity of provincial and district level nutrition staff for intervention management is limited[2].

Program accreditation

- Program accreditation for academic programs (S1-3, D3, D4) is now the responsibility of LAM-PT (an independent authority under the auspices of MOE&C). The 2003 National Education System Act outlined a directive that all programs of study to be accredited by LAM-PT by 2012. Unaccredited programs will be illegal post 2012. LAM-PT will only conducting accreditation if asked by the education institution.

Figure 5.1.3.3.4: Program of study accreditation Process

- In the 2009/2010 review of nutrition education system quality by the World Bank, analysis of system performance indicated that of 24 S1 nutrition study programs, only 10 are accredited; and of 50 D3 program, only 6 are accredited by BAN-PT (the forerunner of LAM-PT). This was due to the many programs in D3 and D4 nutrition being administered by local government and accredited by BPPSDM-MoH. It is unclear how compliance with the 2012 requirement for BAN-PT accreditation will/are be/being monitored and enforced as LAM-PT does not seem to be resourced adequately to perform this function.

Curriculum implementation

- In the 2009/2010 review of nutrition education system quality by the World Bank, questions where raised as to the current capacity of the existing academic workforce (those involved in nutritionist training and education) and the academic workforce development strategies in place to ensure academic capacity. The academic nutrition workforce is a critical component of any quality system for nutrition education. Numerous stakeholders admitted that the Indonesian nutrition faculty is under-developed.

- A system of teacher certification by government committee exists based on Decree of MONE (No. 42/2007). It is difficult to assess what impact this has on ensuring quality learning and teaching practices by academics.

- It is unclear which (if any) internal QA system is adopted by D3 program of MoH and local government. This is evident from the low quality of nutrition graduates stated by users of the graduates. Users are even able to point to institutions that produce low quality graduates.
Certification of nutrition graduates

- MOH Decree 161 requires that all health manpower to have competency assessment leading to certification and registration. The system for quality assurance previously outlined in Figure 3 suggests certification and registration as being two separate steps and processes. It is not clear if this is intentional nor is it clear that this is desirable or practical.

- Currently there are no standards or processes developed for certification but it is recognised that this is an important potential role for professional associations (e.g., PERSAGI). The certification system is still under development and is being piloted. An instrument for graduate certification is a project to be progressed via HPEQ2 project funded by the World Bank 2013-2016.

5.1.4 The agricultural system
The review team did not undertake a thorough investigation of the agricultural system in Indonesia. Ensuring that the agricultural system is sensitive to the nutrition situation in the country will be critical.

5.2 Organisational level Capacity
The Community Nutrition service delivery structure of the Puskesmas linked with Posyandus provides a mass reach system for primary care that has the potential to reach the whole community and be a vehicle for community action. From the health outcome data available it is clear that there are wide disparities between provinces. There is variable service provision across Indonesia, with difficulties retaining nutritionists in remote provinces and variable allocation of resources between provinces. There is limited appreciation of the scope of nutrition problems; with too much emphasis being placed on acute service delivery and not enough on primary prevention and community based activities. There is little recognition of the double burden of malnutrition and very little attention paid to young women before they become pregnant and the life course approach.

The information system is not focused on improving the effectiveness of service delivery, and too much nutritionist staff time is spent on routine clerical functions and not enough on community based preventive activities, such as mentoring and support for cadres in Posyandus. At local level there is too little accountability of staff working patterns.

The SUN Movement

- In Indonesia, The Scaling Up Nutrition (SUN) movement is called the National Movement on Nutrition Awareness in the Framework of Accelerating nutrition improvement in the first 1000 days of life (The First 1000 Day of life Movement 1000 HPK Movement). The 1000HPK movement is already embedded in policies on food and nutrition at national and local level and the specific policies and targets are covered by the NPA-FN 2011-2015 (grouped in SUN documents as Nutrition Specific and Nutrition Sensitive programmes). Note that as at Jan 14th, 2013, a Research Development & Training Group (Capacity Building) has been formed by the SUNNERS; chaired by Prof Fasli Djalal, Prof Razak Thatha and Prof Hamman Hadi.
5.3 Workforce level capacity

5.3.1 The Nutrition workforce in Indonesia

Analysis and monitoring of existing workforce structure, size, attributes and continuing education needs is important in terms of developing a quality workforce. The 2009 World Bank review of the medical, midwifery and nursing workforce in Indonesia [30] identified a number of main challenges in the health workforce in Indonesia that are relevant to considerations of the nutrition workforce. These challenges included:

1. there is a shortage and inequitable distribution of health personnel;
2. the education of health professionals is of poor quality and the accreditation and certification system is weak;
3. health workforce policy development and planning is
   a. not based on evidence or demand, but rather on standard norms that do not reflect real need or take into account the contribution of the private health sector;
   b. has not adapted to a decentralized paradigm, and
   c. the growing and changing demand for health care due to demographic and epidemiological changes will increase the burden on the already ineffective health system.

In 2006 a World Bank review of the effect of decentralisation on Indonesia’s nutrition programs [2] identified a range of issues, many of which relate to workforce development, which impair the ability of the system to deliver improved nutrition of the community (Table 7).

<table>
<thead>
<tr>
<th>Factors influencing the capacity of the Indonesian Health System/workforce to deliver improved nutrition [adapted from [2]]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Government structures and processes unsuited to tackling nutrition in a large and diverse country.</strong> The most important issues are:</td>
</tr>
<tr>
<td>o Contested authority between the various levels of government in the wake of the initial decentralization and its continuing modification. The result is:</td>
</tr>
<tr>
<td>▪ The opaque and overlapping responsibilities of those responsible for nutrition at all levels.</td>
</tr>
<tr>
<td>▪ Overlap between the central, provincial and district descriptions as they seem to be formulated by each level independently of the other levels.</td>
</tr>
<tr>
<td>o Most are not working according to the job descriptions due to financial constraints and lack of skills.</td>
</tr>
<tr>
<td>o Inadequate collaboration within districts and between districts and provinces.</td>
</tr>
<tr>
<td>o Structures and staffing levels which are not clearly related to the nutrition and health problems of the district and province or the responsibilities at each level.</td>
</tr>
<tr>
<td>o Very limited flexibility in the ability of districts and provinces to structure their staffing levels and skills mix to meet local needs.</td>
</tr>
<tr>
<td>o Leadership is a critical issue at all levels with considerable differences between provinces and across districts</td>
</tr>
<tr>
<td><strong>Human resources in which there is a mismatch between the required skills and those available, particularly at the district and provincial levels</strong></td>
</tr>
<tr>
<td>o Nutrition has a lower priority than before decentralization as judged by:</td>
</tr>
<tr>
<td>▪ a number of districts no longer have a nutrition section (28 out of 38 in Jatim in 2006).</td>
</tr>
</tbody>
</table>
the person heading the nutrition section often does not have a nutrition background
- the number of staff working in nutrition is small.
  - At the Puskesmas level:
    - Less than half Puskesmas (~35% in 2010) have nutrition staff.
    - many of the staff who are now there will leave soon as they look for career progression, continuing education (e.g. S1) or city-based jobs
    - many nutrition staff are approaching retirement and it is not clear that they will be replaced given the restrictions on recruitment.
  - Generally low skill levels of staff at the district level, especially for program planning and evaluation.
  - An almost complete absence of in-service training for staff at all levels, but particularly at the district and province levels.

- Inadequate planning and poor implementation of nutrition programs. There is:
  - A limited evidence base, and related staff skills, on which to base program planning and to assess the effectiveness of programs.
  - Considerable overlap between the various departments in their responsibility for nutrition with little coordination vertically, between centre, province and district, or horizontally between departments at any level (e.g. Bappeda, Food Security Office, Depkes, DPRD, Women's Affairs etc) in planning or implementation.
  - However, in those districts in which there was coordination (e.g. Surabaya) nutrition programs seemed to have bigger budgets, and perhaps better implementation, at least as measured by CE.
  - Overall nutrition programs have low coverage.
  - Monitoring and evaluation (M&E) is limited due to both staff shortages and lack of skills:
    - It is now more difficult for the centre and the provinces to do M&E as districts no longer feel an obligation to provide reports. Evidence based policy making is even more difficult in this environment of reduced evidence.
    - Most of that monitoring which is being done is on a project basis, rather than a program basis,
    - but Surabaya seems to be an exception where a limited staff is making a good effort to monitor program implementation

- Limited financial resources, especially in the worst affected areas:
  - New budget processes have delayed availability of funds, and program implementation at each level of government until well into the financial year.
  - Limited understanding of, and consequent low priority accorded to nutrition and health issues by district governments.
  - A lack of resources, in some districts, to actually implement nutrition programs.

- Limited collaboration with groups outside government in delivery of nutrition programs
  - Limited involvement of central research institutions in applied research which supports planning and evaluation of nutrition programs.
  - Limited involvement of the private sector in nutrition programs.
  - At the central level there is good cooperation with:
    - national companies e.g. Kimia Farma, Indo Fama, Gizindo, and
    - national NGOs e.g. Indonesian Coalition for Fortification.
  - At the provincial level there is:
    - limited cooperation between NGOs and provincial health office
  - limited cooperation between provinces and private sector or NGOs— an example of an exception is the collaboration between the Jatim and the iodized salt producers
At the district/kota level there is:
- limited collaboration between NGOs and district/kota — the best example in 2006 was Surabaya where there was good cooperation with LPKS (who are paid by the province to carry out nutrition surveys) and Wahana Visi Indonesia (who implement some nutrition programs).

Evidence from the WHO led Landscape Analysis Country Assessments (LACA) and the World bank led Mainstreaming Nutrition Initiative (MNI) [31, 32] carried out in many low and middle income countries (LMIC) over the last five years, indicates that the capacity to act in nutrition is very often quite limited, both at national and district levels. Improving nutrition capacity at all levels of the health system by producing more master’s graduates down to improving health professional in-service training is a common recommendation of LACA and MNI reports.

The NAP-FN 2011-2015 highlight, particularly in Strata 4 provinces strategies directly related to enhancing workforce capacity provides a critically important opportunity to strengthen workforce at the individual level. MOH and Puskesmas have already developed ‘job descriptions’ for nutritionists working at the District level.

### 5.3.2 The current nutrition workforce

As evident in most countries, nutrition service delivery in Indonesia is multidisciplinary, composed of a combination of a relatively small specialist workforce (those trained specifically in nutrition and dietetics) and a generalist workforce of health workers without significant competency development in nutrition and/or dietetics (e.g. nurses, doctors).

As outlined in the following summary table, there are a large number of different workforce groups, with different levels of competency related to nutrition and often competing for similar roles in the health system (e.g. Clinical Nutrition specialists [Medicine] vs dietitians). This lack of clarity about workforce structure and role delineation leads to inefficiencies because of workforce duplication and professional “turf warfare”, which is a considerable distraction from the considerable tasks at hand.

Table 5.3.2.1 summarises the main nutrition workforce tiers and their current roles within the health system.
### Table 5.3.2.1: Workforce constituents summary

<table>
<thead>
<tr>
<th>Workforce group</th>
<th>Estimated No. employed #</th>
<th>Qualifications</th>
<th>Roles</th>
<th>Comments/Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NUTRITION SPECIALISTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutritionists</td>
<td>~19000 graduates since 1953, ~2000 D3 per year ~1200 SGz per year</td>
<td>D1 Nutrition</td>
<td>D1 Nutrition</td>
<td>Work across the health system and private sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D3 Nutrition</td>
<td>D3 Nutrition</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D4 Nutrition</td>
<td>D4 Nutrition</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S1 Nutrition (SGz)</td>
<td>S1 Nutrition (SGz)</td>
<td></td>
</tr>
<tr>
<td>Dietitians</td>
<td>~70 in hospitals</td>
<td>S1 Nutrition (SGz) + 900hrs + Exam to become Registered Dietitian</td>
<td>Hospital and clinical dietetics services</td>
<td>Relatively recent professional development in Indonesia. Registration process still being developed.</td>
</tr>
<tr>
<td>Clinical Nutritionists</td>
<td>~173 in hospital</td>
<td>S1 Medicine + min 3 yrs specialisation (SpGK)</td>
<td>Appears to be limited to assessment, diagnosis and prescription of dietetic interventions in hospitals. No evidence of providing integrated clinical dietetic services (education, counselling etc)</td>
<td>Medical doctor specializing in clinical nutrition (SpGK)</td>
</tr>
<tr>
<td>Community Nutritionists</td>
<td>??</td>
<td>D3 + 2yrs Or High school + 4 years to be S1 in Schools of Public Health</td>
<td>Work across the health system and private sector</td>
<td>Competency standards being developed by the Collegium Community Nutrition under IAKMI (Public Health Scientist Association). This colloquium covers the public health education majoring in nutrition.</td>
</tr>
<tr>
<td>Academic nutritionists</td>
<td>??</td>
<td>Most of the 8 KIGI accredited programs staff have minimum of Masters(S2) level qualifications and many with or pursuing PhDs</td>
<td>Teaching and research May have other jobs also-many not full time academics?</td>
<td></td>
</tr>
<tr>
<td><strong>GENERALISTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Doctors</td>
<td>&gt;72,000</td>
<td>Unknown</td>
<td>Actual practices re nutrition/dietetics unknown</td>
<td></td>
</tr>
<tr>
<td>Midwives</td>
<td>&gt;175000</td>
<td>Major role expectation regarding nutritional supplementation</td>
<td>Source: [30]</td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td>&gt;372000</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
At present there is no credible estimates of nutrition workforce size, although it has been reported (Mr Budiharja, Former DG Community Health MOH) that a workforce mapping exercise is currently underway. It is unclear to what detail this mapping includes and indeed if the nutrition workforce will be included.
5.3.3 Academic nutritionist workforce

- The academic workforce (nutritionists employed in universities and polytechnics) are a major resource within the nutrition workforce and have a critical workforce development role. Most of the experience, qualifications, research track record and professional leadership pools in this sector of the nutrition workforce.

- The capacity of the existing academic nutrition workforce (as those charged with the responsibility for education) is difficult to quantify but most stakeholders consulted report it to be under-developed (size, experience regarding pedagogy/androgogy, qualifications etc).

- There is still no accurate data on the academic nutrition workforce from 24 undergraduate programs or 9 D3 programs administered via DGHE or for 40 D3 program under MoH. More accurate data are available from 9 undergraduate program recommended by KIGI. Almost all the academic workforce in KIGI accredited programs have master and doctoral qualification.

- DGHE has a road map on the capacity development for academic workforce through several programs such as:
  - scholarships to study in Indonesia or abroad,
  - sandwich program for those who study in Indonesia
  - academic recharger program for lecturers with doctoral qualification and professor.

*It is reasonable to assume that investment in strategies to strengthen academic capacity in the Indonesian nutrition education system is required. It was reported that AUSAID are currently funding a project to build academic capacity within the D3 Colleges under the MOH.*

5.3.4 Workforce size and underemployment of graduates

- The BPPSDMK Profile 2007 (MOH 2007-reported in [30]) suggest there were >15,000 nutritionists in 2006 (~6.86 per 10^5 population), which was ~one-third of the number projected as needed by 2010 (>42,000 or 18 per 10^5 population).

- Best estimates based on consultations (albeit crude) of actual workforce demand (jobs available = ~7000) compared to workforce supply (3200 graduates per year + existing graduate pool of 19,000) suggest considerable under-employment and or under-utilisation of nutrition education competencies in the public health system (i.e. many graduates not working in nutrition or health roles)- even allowing for 50% retirements in the graduate pool since the 1950s.

- The education system is operating as if it is trying to meet the actual need projected, but the employment market (largely the MOH) is not resourcing adequate jobs to meet this supply.

- Even if there was a major investment by the GoI to increase nutrition personnel to meet actual needs (>42,000 or 18 per 10^5 population as projected by BPPSDMK for 2010), the graduate output would not grow the workforce to this level for at least 10 years.

- The new **NAP-FN 2011-2015** sets targets and therefore a mandate for workforce growth, including:
  - numbers of nutrition personnel at health centres (more than 1/center);
  - number of provinces and districts with food and nutrition institutions;
  - number of sub-districts with agriculture field educator trained in food and nutrition;
- number of provinces and districts with energy consumption data; number of provinces with research agenda of food and nutrition;
- number of researchers in micro-nutrients at national level;
- number of provinces and districts that have adopted nutrition programmes in Local midterm development plans.

- In 2010, restrictions on civil service expansion and recruitment prioritisation (by Presidential decree), limit workforce growth in the nutrition specialist workforce tier. This is necessitating a position within the DG Community Health of “working with what we have” to deliver nutrition services. This means that the responsibility of nutrition service delivery at the community level (Puskesmas) is being delegated to nutrition generalists such as nurses, midwives and other health workers, without any obvious technical support or stewardship specific to nutrition. Evidence from other workforce studies conducted in Indonesia suggests that the capacity of nurses, midwives and doctors to effectively implement this nutrition responsibility is limited[30]. This really was reinforced when talking with stakeholders in this 2012 consultation round.
- The capacity of the workforce to address nutrition issues is largely dependent on the leadership and competencies applied by a specialist workforce tier[26].

Table 5.3.4.1: Crude estimates of nutrition workforce demand, supply and need, Health system

<table>
<thead>
<tr>
<th></th>
<th>Current Estimates</th>
<th>Workforce need</th>
</tr>
</thead>
</table>
| **Workforce demand** | ~3000 nutritionists employed amongst 8737 Puskesmas (~35%)  
2000 hospitals average nutrition staff of 2 (~4000 nutritionists)# | 8737 Puskesmas each with a minimum of 1 nutritionist  
2000 hospitals with an average nutrition staff of 10 (~20,000)  
1 public health nutritionist per 500,000 population = 4000+  
= ~32,000 or ~15/10^5 population  
BPPS UMK project >42,000 needed |
| **Workforce supply** | ~3200 nutrition graduates each year (D3 ~2000,S1 ~1200) |                                                                              |
| **Existing graduate pool** | 19,000 graduates from Polytechnic D programs since 1953 |                                                                              |

# dubious data

Having a mismatch between over-supply and actual demand creates numerous workforce management problems and questions:

- To what extent do the education institutions prepare graduates who don’t get work in the public system to work in private sector?
- It creates considerable competition amongst graduates for jobs, which may become a source of inter-professional and political conflict (dietician and clinical nutritionists).
- Underemployment of highly trained graduates is a waste of education resources and outcomes.

5.3.5 Nutritionists in the Private sector

Information about the size and role of the private sector nutrition workforce is limited, however it is anticipated that there is a large unregulated private practice workforce (or a large amount of D3 Nutrition graduate unemployment/under-utilisation).
5.3.6 Nutritionists in the Food Industry

Limited number restricted to roles in health marketing, research and development, product development and brand management. Existing D3 Nutrition program graduates are not well prepared for food industry needs for food technology.

Summary: Challenges with the existing nutrition workforce

- There is currently inadequate and reliable data available about the nature and attributes of the existing nutrition workforce, realistic projections of workforce needs related to the work required to address nutrition challenges. This is a major impediment to efficient and effective workforce planning and capacity building.

- Specific issues relating to human resource management relevant to nutrition include:
  - Limited needs based workforce planning
  - A lack of analysis of work required and most effective and efficient human resource mix required to deliver
  - Limited capacity of the academic workforce
  - Nutrition workforce growth constrained by budget allocations, decrees prioritising other workforce groups
  - Perception and policy at Directorate General Community Health Management and PPSDM levels (MOH) that nutrition services can be delivered by other generic health workers and is not a priority compared to competing interests (e.g. midwifery-childbirthing etc)
  - Difficulties with recruitment and retention of nutritionists to Puskesmas (if and when prioritised), particularly in non-urban areas because of limited career incentives, unchallenging role of positions in Puskesmas relevant to perceived skills/status,and
  - Unprofessional human resource management practices and systems (limited use of position descriptions etc)[2].

5.4 Individual level capacity

The structure of the health service provides the opportunity to place nutritionists in the community. The capacity of nutritionists to be effective in the community appears to be limited by their roles and skills being undervalued, underutilised, and not being used efficiently. Too much time is spent in routine administrative roles and not enough asserting professional responsibilities for nutrition in their community. Too little time is spent in supporting cadre working in posyandus and enhancing primary care and preventive services, and too much time on acute services. Work does not seem to be driven by community needs and this may be a reflection of the lack of ongoing training and appropriate feedback from information systems to direct action toward more preventive activities in the community.
6. SUMMARY OF MAJOR CHALLENGES AND WEAKNESSES

The Landscape analysis has highlighted the medium and longer term challenges that affect, and are linked to, nutrition capacity in Indonesia. These include: nutrition coordination and responsibilities; budget and funding; planning and design of programmes; nutrition information system, and human resources. The analysis conducted for the present report reinforce these findings and here the key challenges directly related to the terms of reference of this report are highlighted. The challenges have been summarised under the four levels: system; organization; workforce; and individuals. The recommendations that follow are designed to focus on the role UNICEF can play in addressing these challenges.

6.1 System level challenges

- Limited leadership and lack of coordination across government limits the effectiveness of action plans to improve nutrition in Indonesia
- Limited appreciation of the scope of nutrition problems (current and emerging) across the nutrition and health system: little serious consideration of the double burden of malnutrition and the impact of adolescent/pre-pregnant nutrition on later health.
- Too little attention paid to proactive community level primary prevention;
- Nutrition professional organizations are disorganised and underdeveloped, and hampered by the current leadership
- Disconnect between Central, provincial, district and health service delivery planning, budget allocation, information transfer and use.
- Variation in measures of nutrition well being (for example, stunting) across Indonesia indicate uneven provision of services at provincial level;
- Provinces with high burdens of poor health tend to have more difficulties with retaining nutritionists.
- Research agenda is not focused on improving the effectiveness of service delivery
- Existing nutrition education system is disjointed and not obviously integrated with workforce planning. This has been largely the result of contested responsibilities between the MONE (MOE&C??) and MOH, which undermines the effectiveness and efficiency of the educational system.
- Historical practices of MOH providing training for ‘vocational’ staff (D3), while MOEC provides training for academics through universities, is out-dated and inefficient and not meeting the needs of the country.
- Career pathways for some staff are blocked by regulations and this is divisive among the workforce.
- Institutions that provide training may be resistant to changes in the curriculum; they may not have staff with the appropriate skill mix to provide the new curriculum
- Even if there is support for curriculum renewal, it will take time for courses to change, and it will take a number of years for sufficient new graduates trained in the new curriculum to be in the workplace.
• Lack of clear nutrition service standards limits the effective use of the workforce. These standards need to reflect current and emerging population needs, and codify the core functions of the workforce. Existing staff are not being fully utilised and are not as effective as they could.
• Need to develop consensus amongst stakeholders about the structure and nomenclature of the nutrition workforce required to most efficiently deliver required services and programs.

6.2 Organizational level challenges
• Uneven provision of nutrition staff across provinces; provinces that are remote from Jakarta and have a high burden of ill-health are more poorly serviced, and staff retention is a major challenge.
• Best use is not made of the existing staff at Puskesmas level as too much attention is directed toward acute nutrition problems rather than directing effort to community based support for more preventive actions.
• Too limited appreciation of the scope of nutrition problems (current and emerging) across the nutrition and health system so that little attention is paid to problems of overweight or NCDs, despite evidence that these problems are growing and already affecting significant numbers in the community. There is virtually no consideration given to the needs of supporting women before they become pregnant.
• Service standards for nutrition service roles need to be updated- Nutrition manpower underutilised
• Information systems are not focused on improving effectiveness of service delivery, and are inadequate for human resource management and planning, service monitoring and design.

6.3 Workforce level challenges
• Inadequate and unreliable data available about the nature and attributes of the existing nutrition workforce and this is impeding efficient workforce planning and capacity building.
• Based on best available information the existing workforce at Puskesmas level is about a third of that required.
• Nutrition workforce that is in place is underutilized and under-performing- too much time in administrative roles and not enough time spent in primary preventive community based work.
• Difficulty to recruit and retain staff in remote provinces and rural areas where the burden of ill-health tends to be greater.
• Service standards for nutrition service roles are out of date and do not current job requirements.
• Puskesmas nutritionists are not being used effectively to train and mentor cadres working in Posyandus, who work most closely with the community and where opportunities for more preventive support may be most effective.
• Because of inadequate human resource stewardship and accountability, existing staff spend too much time away form their civil posts doing private practice.
6.4 Individual level challenges

- Level of access to Puskesmas services appears to be declining, and too little focused on community development and primary prevention.
- Nutritionist role in the Puskesmas is undervalued and underused, with too much time spent on administrative duties. The work of the nutritionist does not seem to match the needs of the community.
- Lack of nutritionists working at provincial and district level and it is not clear how these roles articulate with nutritionists working at Puskesmas level.

7. RECOMMENDATIONS

The determinants of nutrition capacity in Indonesia are numerous, varied and distributed across multiple sectors, systems and levels. This analysis using desk review, limited stakeholder consultants and SWOT analysis has identified at least 10 strategic priorities that will address some of the key challenges identified.

The following 10 step staircase framework is proposed below to help illustrate the mix of strategies proposed to help build nutrition capacity in Indonesia over the short (2-4), medium (5 years), to longer (10) year period. Some of the strategy recommendations (steps 1-10 ) to build capacity across the system can be piloted in the immediate short term. Structural changes to training and professional organisations needs to start now but will take longer to affect outcomes.

7.1 Over-arching Principles

Some overarching principles relevant to nutrition capacity building are worth noting and underpin the suggested strategies that follow.

7.1.1 Recognise and leverage of existing capacity

It is rare that existing systems, organisations, workforces or individuals have zero capacity. Assessing and recognising existing capacity is therefore an important part of capacity assessment, as it reduces duplication of capacity building effort, helps identify priorities for capacity building effort and can be a point for leveraging broader capacity gain. For example, identified leadership can be supported to leverage resource allocation, enhance resource utilisation efficiency by enhancing service delivery or build capacity via mentoring and workforce development.

7.1.2 Think in terms of short (2-3 years), medium (5 years) and long (10 years) timeframes for capacity improvement

Changing capacity bottlenecks in different sectors and at different levels requires reasonable timeframes. To illustrate, curriculum redesign within the University system to enhance the quality of workforce preparation can take up to 5 years or more before the products of these curriculum changes (graduates) enter the workforce. Further time is needed for graduates to develop further via
work-integrated learning after employment and to develop competencies required for practice and service improvement.

However, there are actions that can be taken in the short term. In-service training needs to be prioritised to support new service and program implementation and to greater empower health professionals to develop problem solving capabilities in practice. The application of these skills could be piloted in a few key sentinel sites to demonstrate the impact that a shift to more preventive activity can have.

Structural changes to training and professional organisations needs to start now but will take longer to affect outcomes.

Almost all of the strategy recommendations (steps 1-10) to build capacity across the system can be piloted in the immediate short term in selected districts. This approach will enable the development and refinement of health service architecture (nutrition service standards, role delineation, workforce continuing professional development, etc ) with active engagement of relevant stakeholders proximal to the sentinel sites (the local university, local branches of professional organisations, district office staff, puskesmas etc). This engagement will enhance “ownership” and sustainability of changes made (a key component of capacity building). Rigorous evaluation of sentinel sites is recommended to develop the evidence-base to support further roll-out of those systems and structures across the health system.

7.1.3 Use a mix of upstream and downstream strategies

The following diagram conceptualises the workforce development life-course to illustrate what is implied by upstream and downstream strategies.

<table>
<thead>
<tr>
<th>Workforce preparation</th>
<th>Workforce Organisation</th>
<th>Workforce practice/Service delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum</td>
<td>Workforce size</td>
<td>Service delivery model</td>
</tr>
<tr>
<td>Teaching methods</td>
<td>Workforce distribution</td>
<td>Workforce practices</td>
</tr>
<tr>
<td>Assessment methods</td>
<td>Role delineation/role</td>
<td>Service evaluation and re-design</td>
</tr>
<tr>
<td>Academic capacity</td>
<td>clarity</td>
<td>based on evaluation and need</td>
</tr>
<tr>
<td>Learning exposures</td>
<td>Performance management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workforce support</td>
<td></td>
</tr>
</tbody>
</table>

INPUTS

Downstream

OUTPUTS

Upstream

7.1.4 Identify capacity bottlenecks and focus on those that are modifiable

A basic principle of intervention management and strategy development is to identify determinants that are non-modifiable and don’t waste time and resources trying to change them. (i.e. focus on the things you can change).

7.1.5 As “outside agents”, prioritise support to “inside actors/leaders” who can drive capacity improvement from within.
7.2 A framework: Ten steps up the capacity staircase

The following 10 step staircase framework is proposed below to help illustrate the mix of strategies proposed to help build nutrition capacity in Indonesia over the next 5-10 year period. There is a logic to the sequential nature of the steps, but there may benefit in implementing some of the strategies in parallel to add efficiency to the timescale for completion of the whole package. These suggestions are informed by the principles previously described.

Figure 7.2.1: The capacity building strategy staircase
## 7.3 Strategy recommendations

<table>
<thead>
<tr>
<th>Step</th>
<th>Strategy</th>
<th>Recommendation</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1    | **Nutrition Service Standards**             | Redevelop nutrition service standards (core functions) to reflect the type of services and work needed across the different modes of practice (clinical nutrition/diетetics, food service management, community nutrition, public health nutrition) to most effectively address nutrition service needs. This is a pre-requisite project to guide enhancement of both the nutrition education system and the nutrition service delivery within the health system. | Ibu Arsita, MOE&C  
Prof Hamam Hadi (AIPGI)  
~US$60K HPEQ2 funds to progress this recommendation  
Project already being planned, lead by Hamam- support may be required on methodology- this will identify what should be included in competencies and curriculum. (step 2) |
| 2    | **Workforce development architecture and international benchmarking** | Develop the nutrition workforce quality system architecture including:  
- Revision of and broad dissemination of job descriptions that reflect new service standards.  
- Further development of specific competency standards that reflect revised service standard implementation (competencies fit for practice)  
- Development of assessment tools/systems for graduate certification  
- Development of assessment tools/system for program accreditation  
Facilitate appropriate international benchmarking for workforce development architecture, particularly relevant to the scheduled ASEAN free trade agreement due in 2015 that will enable labour force mobility within ASEAN. | Ibu Arsita, MOE&C  
Prof Hamam Hadi (AIPGI)  
HPEQ2 funds to progress-quantity unknown- probably inadequate?  
AIPGI/PERSAGI (graduate certification)  
LAM-PT (re program accreditation) |
<p>| 3    | <strong>In-service training at many levels</strong>      | Enable a systematic program of in-service training targeting D3 nutritionists in puskesmas, cadres in posyandu, agricultural extension workers and midwives. This in-service training should prioritize new services and programme implementation and empower health professionals to | Untang Suseno (BPDPSDMK-MOH) has suggested inadequate funding for CPD will be prioritised to midwives. |</p>
<table>
<thead>
<tr>
<th></th>
<th>Leadership development</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
<td>Support nutrition leadership development programs targeting nutritionists within ministries, health services, academia and professional organisations. This activity should encourage international engagement, broadening of the leadership base across systems, organisations and geographical location.</td>
<td>Key actors include AIPGI, PERSAGI Academia, early career nutritionists, emerging dietetic professionals</td>
</tr>
</tbody>
</table>
| **5** | Support academic capacity development via strategies such as:  
- Strengthening collaboration between academics re teaching methods, competency standards development, curriculum renewal etc. (via AIPGI)  
- Facilitating international engagement in nutrition conferences, academic exchange between universities outside Indonesia  
- Strengthening academic collaboration with ministries regarding intervention research | Support AIPGI  
Possible entry point is the AUSAID funded project that is aiming to strengthen academic quality in Polytechnics.  
Identify gaps in existing academic workforce; for delivering curriculum, and also working with partners to undertake relevant research and scholarship to improve the effectiveness of interventions (and delivery and monitoring of targets. NAP-FN identifies a number of relevant... |
<table>
<thead>
<tr>
<th></th>
<th>Health service and intervention research</th>
<th>Support the development of nutrition intervention research and evaluation capacity (amongst nutrition practitioners and academics). This can be facilitated by a pilot project based on a small number of Puskesmas (“Sentinal sites”) *that have services re-oriented to reflect more preventive and proactive nutrition service delivery, with these sites undergoing systematic evaluation to measure health service quality/ capacity gains.</th>
<th>Will need MOH buy-in, potentially major project</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Partnerships</td>
<td>Encourage university: MOH (District &amp; Provincial level) collaborations for service evaluation, intervention research, work integrated learning (internships etc).</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Investments in workforce growth</td>
<td>Advocate for further GOI investment in new nutritionist positions to meet nutrition security and health needs and to align recruitment to efficient service standards and community needs. Investments in workforce growth need to be implemented after or in parallel with greater stewardship and management of existing human resources.</td>
<td>Evidence of significant inefficiencies and human resource leakages due to limited stewardship at service delivery level</td>
</tr>
</tbody>
</table>
9 **Strengthening professional organisations independent of government**

Strengthen professional organisations representing professionalization and support needs of all sections of the nutrition workforce (D3, SI, dietitians, nutrition academics). The professional organisation supporting the emerging dietetic profession being a priority.

An independent and professional organisational structure to provide professional advice and nutrition specific advocacy will strengthen the nutrition system in Indonesia.

10 **Stewardship**

Support the National Task Force for the SUN Movement in Indonesia (1000 HPK) integrate multi-sectoral oversight and stewardship of national nutrition and food security action plans/policies reporting to the President’s Office.

*This type of project could be used as the vehicle to progress recommendations 1, 3, 7, 8, 9, 10*

The steps indicated above can be progressed in a coordinated manner, over the next 5-10 years. Almost all of the strategy recommendations (steps 1-10) to build capacity across the system can be piloted in the immediate short term. Structural changes to training and professional organisations needs to start now but will take longer to affect outcomes.

**Coordinated key short term actions**

UNICEF should develop and test a model or proof of principle, to show how a District health system could support more effective working practices in the work in the puskesmas and posyandu. This modeling should:

- involve in-service training and re-organisation of health services;
- be rigorously evaluated for both process and outcome to develop the evidence-base to support further roll-out of those systems and structures across the health system;
- be undertaken in selected Districts with different local health burdens and challenges to explore how these local circumstances/factors affect impact on health.

In-service training needs to be prioritised to support new service and program implementation and to greater empower health professionals to develop problem solving capabilities in practice.

This approach will enable the development and refinement of health service architecture (nutrition service standards, role delineation, workforce continuing professional development, etc ) with active engagement of relevant stakeholders proximal to the sentinel sites (the local university, local branches of professional organisations, district office staff, puskesmas etc). This engagement will enhance “ownership” and sustainability of changes made (a key component of capacity building).
### Stakeholders Consulted

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Position</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonia Blaney</td>
<td>Nutrition Specialist</td>
<td>UNICEF Indonesia</td>
</tr>
<tr>
<td>Sri Sukutjo</td>
<td>Nutrition Specialist</td>
<td>UNICEF Indonesia</td>
</tr>
<tr>
<td>Robin Nandy</td>
<td>Chief of Child Survival &amp; Development</td>
<td>UNICEF Indonesia</td>
</tr>
<tr>
<td>Academic staff</td>
<td>Nutrition Division</td>
<td>UHAMKA University (Private)</td>
</tr>
<tr>
<td>Untung Suseno Sutarjo</td>
<td>Head, BPDPSDMK</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td></td>
<td>National Board for the Development and</td>
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<td></td>
<td>empowerment of Health Human Resources</td>
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</tbody>
</table>
References


