

## **Achieving the Sustainable Development Goals<sup>1</sup>**

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September 25, 2015, was the day when world leaders set us on a new course by adopting the 2030 Agenda for Sustainable Development, including the 17 Sustainable Development Goals (SDGs). The first test of the SDGs came a few weeks after the September UN Summit, when the world gathered in Paris at COP21. SDG13 commits all the world's governments to combat and curb human-induced climate change. Consistent with that commitment, the same governments adopted the Paris Climate Agreement establishing the central objective of keeping global warming to well below 2°C. The Paris Agreement marks the most important agreement on climate change since the adoption of the UN Framework Convention on Climate Change (UNFCCC) at the Rio Earth Summit in 1992.

Today, I want to convey one message, one belief of mine, and that is that the new Sustainable Development Goals are important. That may not be self-evident. Many people in the world do not yet know much about these goals. When people in the United States or in other capitals around the world hear about these goals, they may shrug their shoulders and say: "Okay, another UN document. What difference can the goals possibly make?" I want to use this opportunity to emphasize that these goals can make a vital difference indeed. I cannot think of any other way for us to achieve sustainable development but through having globally agreed upon goals such as those adopted on the 25<sup>th</sup> of September.

I am, in short, a believer in these UN documents. Many people think that UN agreements are just vapor, that it is easy to say things and not really achieve them. What difference can yet another high-minded set of pledges make? However, I am in my fourteenth year of being the Special Adviser to the UN Secretary General on the Millennium Development Goals (MDGs), which have been in operation for fifteen years since they were adopted at the Millennium Summit in September 2000. I do feel that I've had a privileged vantage point to see to what extent high-minded aspirations adopted by the UN General Assembly can make a difference. My verdict is that the Millennium Development Goals have made a difference. They have not accomplished all that they could have accomplished. They have not accomplished all that they should have accomplished. They have not accomplished all that they were promoted to accomplish back in September 2000. However, they've made a real difference in a way that teaches us a lot about how we can use the SDGs for even bigger achievements.

### **Getting to Know the SDGs**

The idea of adopting Sustainable Development Goals came in the Rio+20 Summit in June 2012. June 2012 was the 20<sup>th</sup> anniversary of the Rio Earth Summit. Major conferences such as the Earth Summit are typically marked by anniversary conferences. In fact, the Rio Earth Summit itself was the 20th anniversary of the UN Conference on Environment and Development in Stockholm in 1972. Then came the 1992 Rio Earth Summit, followed by the Rio+20 Summit in June 2012. The 2012 event was in its way a somber gathering because the high aspirations of the Rio Earth Summit had not been fulfilled. The Rio Summit had adopted the concept of

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Sustainable Development as the centerpiece for global cooperation. Yet, somehow, the concept had not succeeded; it had not grabbed the global imagination. The outcome of the 1992 Rio summit was the adoption of three major Multilateral Environmental Agreements (MEAs): *The UN Framework Convention on Climate Change* (UNFCCC), the *UN Convention on Biological Diversity* (UN CBD), and the UN Convention to Combat Desertification (UNCCD). By June 2012, twenty years after the adoption of the three treaties, it had become painfully clear that they were not delivering the needed results.

The problem is not the treaties themselves. They are wonderful treaties. I have the privilege of teaching them each year to our incoming students in sustainable development. If you read them, you have to be impressed with what the world agreed on and the power and quality of the drafting and the statement of the principles. The *UN Framework Convention on Climate Change*, for example, committed all countries to avoiding dangerous anthropogenic interference with the climate system by stabilizing greenhouse gas emissions.

Yet, when the governments came back to Rio in June 2012 on the 20th anniversary of the treaties, *Nature Magazine* gave a failing report card to the treaties. Indeed, the magazine (one of the two preeminent English-language scientific weeklies) gave all three treaties the grade of F for failure. Not one of the treaties had been implemented. Despite strong treaties on climate, bio-diversity, and desertification, the actual situation in 2012 was awful on all three dimensions: greenhouse gas emissions and climate change were running out of control; species extinction was, perhaps, 1,000-fold greater than the natural rate of species extinction; and desertification (meaning the degradation of land in the dry lands) was proceeding rapidly in many dryland regions. I don't think that one in a million people even knows that the UN's Convention to Combat Desertification actually exists, although many of the dryland regions of the world, including the Middle East, North Africa, and the Sahel, are facing growing degradation and massive disarray facing the local populations. It is mainly the drylands that are the source of huge migrations in the world, like the migration crisis that Europe is living through day-by-day.

In 2012, the UN member states asked themselves: "Why are these treaties falling so far short?", and they looked over their shoulders at the Millennium Development Goals (MDGs). They knew that the MDGs were quite different. The Millennium Development Goals were not a multilateral treaty. They were a non-binding and non-legal moral or aspirational commitment of the UN member states. They were addressed not mainly to governments but to a public mobilization of interest and awareness in the fight against extreme poverty. They were also time-bound: 15 years, for the period 2000-2015. The MDGs stated specific and quantified targets, such as reducing the under-five mortality rate by two thirds, and the maternal mortality rate during pregnancy and childbirth by three quarters, comparing the 2015 target year with the baseline of 1990. They called on the world to cut the rate of extreme poverty and hunger (as defined and measured by the World Bank and the Food and Agriculture Organization, respectively) by half as of 2015, again compared with the 1990 rate.

While the three multilateral environmental agreements – all legally binding – found themselves tied up in diplomatic knots, the Millennium Development Goals had achieved some measure of success with the global public. They attracted interest. Donors responded at least partially to these non-binding but aspirational goals. The IMF and the World Bank adopted and implemented new debt-relief proposals (the HIPC initiative) to help make the MDGs stick. New institutions like the Global Fund to Fight AIDS, TB, and Malaria were established to help implement the new goals, especially MDG6, which called on ending epidemic diseases like AIDS and malaria. Real progress was made.

The upshot of the MDGs was that in 2012, the conference participants at Rio+20 were a little bit “envious” of the MDGs. Of course, I speak facetiously, but they said in effect: “We have legally binding instruments that aren’t working, while the MDGs without all the lawyers and diplomats seem to be capturing the public interest and the public spirit.” That, in essence, led to the call for new Sustainable Development Goals in the final outcome document of the Rio+20 called *The Future We Want*. The governments called for new SDGs and gave the UN General Assembly the assignment of coming up with the new goals by the end of 2015, the completion date of the Millennium Development Goals.

Indeed, the UN General Assembly responded. Even the process of determining the new SDGs generated much more global interest and public engagement than one might imagine. Perhaps even more remarkably, the final outcome document establishing the SDGs, *Transforming Our World: The 2030 Agenda for Sustainable Development*, was actually gaveled several weeks before their formal adoption on September 25. It’s rare indeed when the UN General Assembly completes its work ahead of time. This time, every country understood the critical importance of adopting a new global framework for sustainable development.

Let me summarize in one sentence what the UN means by sustainable development: economic development should continue, combined with social inclusion and environmental sustainability. This is a triple-bottom-line concept, integrating economic, social, and environmental objectives. In a way, I think this triple-bottom-line definition is a clearer and more operational definition than the one that the Brundtland commission pioneered in 1987: that each generation should meet its needs in a manner that allows future generations to meet their needs. Rather than that inter-generational approach, the new sustainable development concept emphasizes holism across economic, social, and environmental goals.

The reason we need SDGs is that the triple bottom line is not being achieved right now. On the positive side, the rate of extreme poverty has fallen sharply (from around 37 percent in 1990 to 10 percent in 2015) in line with overall relatively robust economic growth as a global average. Yet, at the same time, the world has many regions where global growth of the past generation has not been sustainable. On the one hand, inequalities have been rising markedly in many countries, including my own (the U.S.), and, at the same time, the environment has been degraded severely on an unprecedented scale.



Figure 1. Street Protests across Major Cities of the World

The collection of pictures in Figure 1 (above) shows street protests across major cities of the world. It is meant to capture in one graphic the deep social unhappiness in many places of the world now facing high

unemployment, rising inequalities, and falling legitimacy of governments. Issues such as these form part of the second social pillar of sustainable development, which is the target of the Sustainable Development Goals.

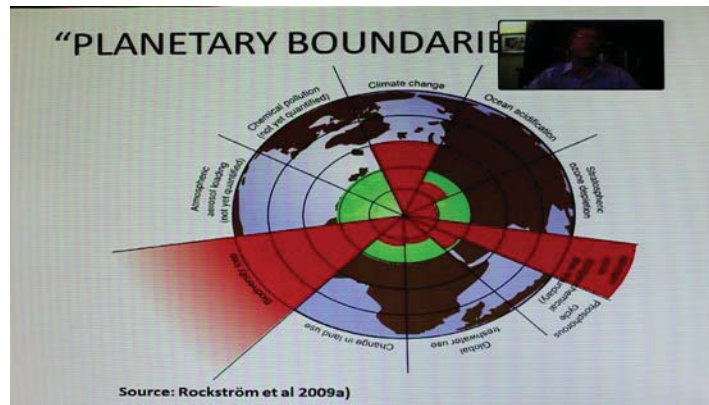


Figure 2. Planetary Boundaries

Figure 2 (above) is the famous picture from Nature Magazine in 2009, which I strongly recommend as our framework on the environmental side of the SDGs and that is the idea of planetary boundaries. Ten dimensions of the Earth’s physical systems are under extreme stress, led by human-induced climate change and the loss of biological diversity. However, we also have unprecedented stresses on many other aspects of Earth’s systems, including pollution, aerosols, fresh water stress, nitrogen and phosphorus loadings, ocean acidification, and stratospheric ozone depletion. Because of the unprecedented scale of human activity, which is now around \$110 trillion dollars of Gross World Production at the current annual rate, humanity has imposed so much stress on the earth’s physical systems that we are crossing “planetary boundaries,” not just in one dimension like greenhouse gas emissions or even two dimensions including species extinction, but across ten major planetary boundaries.



Figure 3. Sustainable Development Goals

The purpose of the 17 SDGs (see Figure 3, above) is to have a globally agreed holistic approach to the three major pillars of sustainable development: economic development, including ending extreme poverty; social inclusion, meaning gender equality, human rights, and the reduction of inequalities; and environment

sustainability, including combatting human-induced climate change, and conserving and protecting oceans and eco-systems. Finally, SDG17 calls for the “Means of Implementation” (MOI) for the 16 preceding Sustainable Development Goals.

We have 17 goals. I argued in the UN General Assembly for three years that there should be no more than 10 goals; then I grudgingly “conceded” that 12 would work; and at the end, of course, the governments themselves firmly said 17. At first I was alarmed at that number. How could we use 17 goals, I wondered. However, the 17 goals are solid and important. In fact, with a little bit of practice, it’s possible to remember all 17 goals. I am learning to live happily with them, although I would have preferred a smaller number. There are an even larger number of targets: 169. Yet the 2030 Agenda mentions that these are, indeed, indicative targets that each country should prioritize given the national context. The SDGs cover the period from January 1, 2016, to December 31, 2030.

These are the universal goals, which are very important to understand and emphasize. It means that Switzerland, the US, the European Union, China, and all others need to achieve the SDGs. These are not poverty goals, as with the MDGs. Ending poverty is certainly a key part of the SDGs; indeed, ending extreme poverty is SDG 1. However, the SDGs are not only about ending poverty. They are about the holistic challenge of sustainable development. The goals are universal, indivisible, and interlinked, which means they are for all of us.

### **Sustainable Development Plans**

I would like to discuss how we can take these goals seriously. When we read the goals, they seem rather sensible. They are technically achievable. To achieve them, however, will require significant new efforts locally, nationally, and globally. In other words, we are not on a business-as-usual (BAU) path to achieve the Sustainable Development Goals, but they are not fairytales, either. They are time-bound, quantified objectives that are within reach. Let me highlight a few of them in a bit more detail.

First, ending extreme poverty, SDG1. This does not mean ending all poverty. It means ending extreme poverty as the World Bank defines it: income (or consumption) of \$1.90 per person per day or less when measured in 2011 purchasing power prices. This goal is within reach, but it will certainly require significant efforts to help the poorest countries to overcome the poverty trap. SDG7 calls for universal access to modern energy services by 2030. As we know, there are about 1.5 billion people that do not currently benefit from modern energy services, yet improved technologies, whether low-cost solar panels and cloud-based systems for e-payments, now make it possible to reach the hardest to reach. SDG4 calls for universal completion of secondary education by the year 2030. In low-income countries today, only 30% or so of young people finish secondary school. To boost the rate to nearly 100% will require a massive scale-up of access. Information and communications technologies, or ICTs (such as online classrooms, teachers train by videoconferencing, e-libraries, and more), can be a big help that has only now become available.

As the result of rising world incomes and improved technologies – notably ICTs – even the boldest of the SDGs is within reach. Yet, we need a far more ambitious trajectory of public and private investments for success. We also need plans for success. We need to be able to look ahead for 15 years, not to make forecasts of where we will be in 2030, but to make “backcasts” from 2030 to identify what we need to be doing right now in order to arrive at 2030 with the goals achieved.

I like very much what President John F. Kennedy said about goals in a famous speech he gave half a

century ago. He said: “By defining our goal more clearly – by making it seem more manageable and less remote – we can help all people to see it, to draw hope from it and to move irresistibly towards it.” President Kennedy’s vision of leadership was to define a bold goal, such as landing a man on the moon and returning him safely to Earth by the end of the 1960s, and then to show that the bold goal is in fact “manageable” through highly professional plans of action, and thereby have people draw hope from the goal and move irresistibly toward it.

I found in my own experience of working on the MDGs that this kind of goal orientation is really the essence of achievement. Consider a goal like reducing malaria mortality as it is set in MDG 6 in the year 2000. Make a plan of action based on the best of the malariologists’ tremendous expertise. Be bold and show that the goal is in fact manageable. Then implement the plans, creating new institutions, funding sources, and trained personnel to get the job done. The success has been remarkable: malaria deaths are down by more than 50% since their peak in the early 2000’s, perhaps down by as much as 70% at this point.

Many important contributors made this possible. Novartis produced the new, cutting-edge medicines in mass production and at low cost. Sumitomo Chemical produced state-of-the-art long-lasting insecticide treated bed nets. Community health workers empowered by mobile phones delivered the bed nets and medicines in large numbers. The Global Fund to Fight AIDS, TB, and Malaria and the US President’s Malaria Initiative provided vital funding. Rapid diagnostic tests were developed to support community-based care. I’m happy to say, the UN system adopted a recommendation that I made soon after the MDGs were announced: the massive, free distribution of bed nets so that even the poorest of the poor would have access to this crucial, life-saving technology. Put all together, these efforts constituted a remarkably effective “malaria-control system” that has gotten the job done, though with further improvements and scale up, even more progress is at hand.

In short, the marriage of cutting-edge technologies, businesses ready to scale them up, public financing, and a clear, strong, and motivating global goal made it possible to achieve the malaria breakthrough and many others like it. President Kennedy’s idea of setting a global goal, making it seem manageable by showing how it can be done, and then fighting to implement it, has proved its worth time and again. Now the new SDGs call on us to mobilize this process of change yet again in the service of sustainable development.

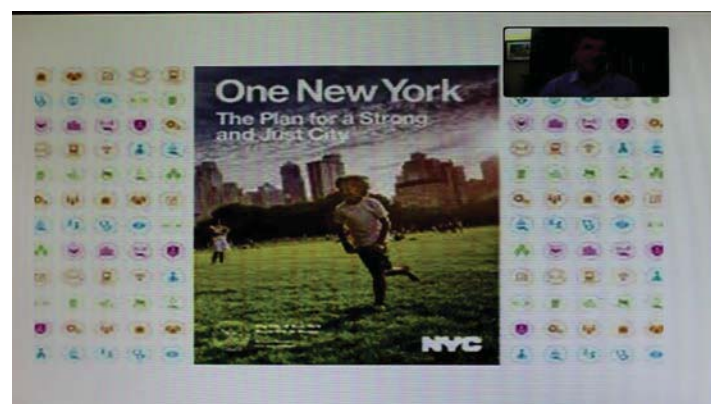


Figure 4. NYC Plan for a Strong and Just City

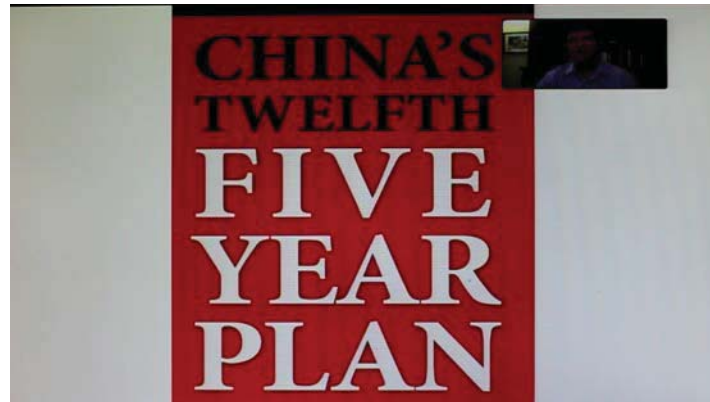


Figure 5. China's Twelfth Five-Year-Pan

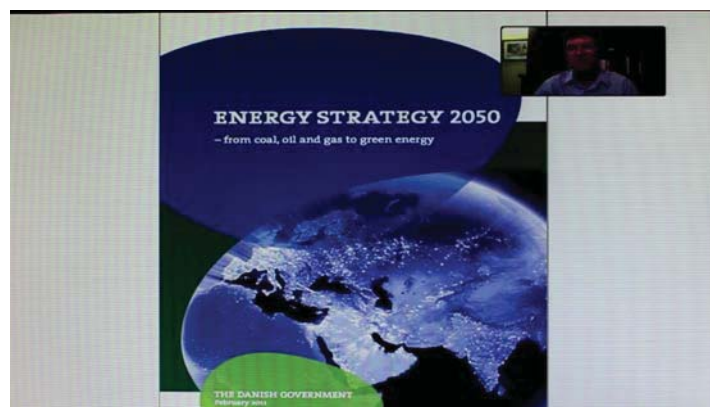


Figure 6. Energy Strategy 2050

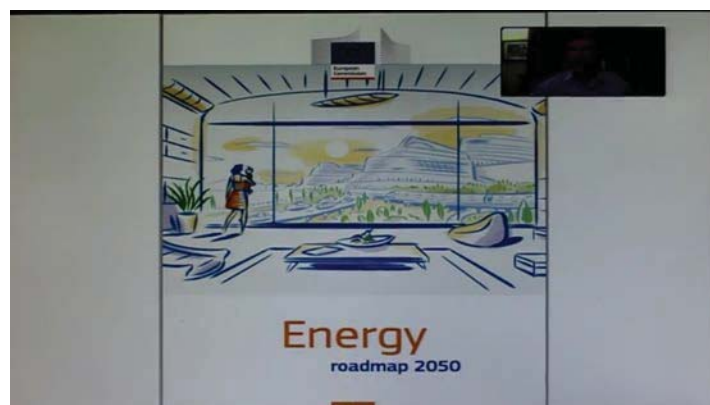


Figure 7. Energy Roadmap 2050

Take as an SDG example the report *One New York* (Figure 4), a New York City sustainable development plan issued in spring 2015. It is a detailed document of hundreds of pages that focuses on integrated planning for NYC's economic, social, and environmental agendas along SDG lines. Or consider *China's 12<sup>th</sup> Five-Year Plan* (Figure 5), which reminds us that many countries have sustainable-development-related planning processes. China is about to adopt its *13<sup>th</sup> Five-Year Plan* in 2016. Such city and national plans offer crucial

opportunities to integrate the Sustainable Development Goals into local and national planning processes. *Energy Strategy 2050* (Figure 6) is the Danish government's 40-year plan on getting to a zero-carbon energy system by 2050. Finally, consider *Energy Roadmap 2050* (Figure 7), which is the European Union's roadmap for an 80% reduction of green-house gas emissions by the year 2050.

### Technology, Innovation, and the Sustainable Development Goals

Let me conclude with a few brief points.

First, a point that needs emphasizing constantly to the public and the policy community is that we can achieve the UN Sustainable Development Goals because we are in the midst of a technological revolution built on the new ICTs and digital sciences. This technology revolution, including mobile broadband, cloud computing, advanced genomics, high-tech agriculture, nanotechnology, robotics, artificial intelligence, remote sensing, and other advances building on ICTs, makes it feasible to envision remarkable advances in low-cost SDG solutions and their rapid uptake. I am very heartened by the fact that there were very few mobile-phone subscribers 30 years ago, but they now total around 7 billion subscribers, including broad coverage in the poorest countries.

Second, for each of the Sustainable Development Goals, I urge that we compare a BAU or business as usual path with a SD or Sustainable Development path.

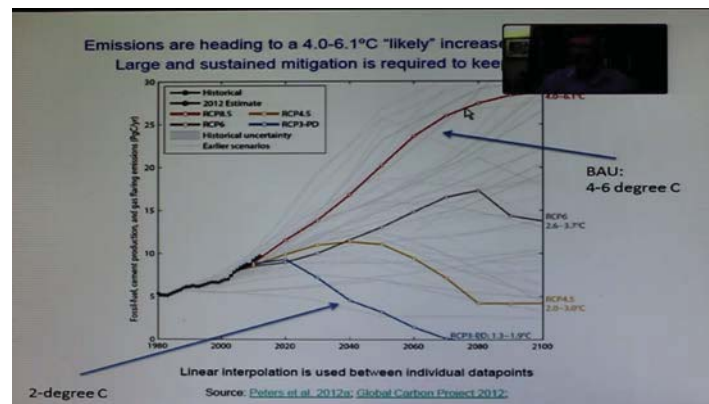


Figure 8. BAU and SD Scenarios

Figure 8 (above) gives an example of what the BAU and SD scenarios would mean in terms of CO<sub>2</sub> emissions from fossil fuel use. The BAU is the top emissions trajectory, which would lead to runaway global warming. The SD trajectory is the bottom curve, consistent with keeping warming below 2°C. Note that CO<sub>2</sub> emissions must fall to zero by around 2070; in other words, it means near total decarbonization of the energy system. The SDGs, therefore, invite every country to prepare one or more detailed pathways of de-carbonization. Such pathways would follow JFK's adage to show that the goal in question (in this case, the control of human-induced global warming) is manageable.





*Figure 9. ICT Platform for Sustainable Development in Africa*

Third, many of the goals will become possible through the adoption of mobile broadband and other ICT technologies. When considering how to achieve Universal Health Coverage, Figure 9 shows a phone in the hands of a community health worker in Africa, actually in one of the Millennium villages. This health worker is using a smartphone to log in data from a visit to one of the households in the village. Goals such as Universal Health Coverage (SDG 3) and Universal Secondary Completion (SDG4) will certainly have to build on an advanced ICT platform.

### **Universities and the SDGs**

Finally, I would like to close with some observations on the role of universities in realizing the SDGs. I have a theory that I would like to share with you. We can use the global network of universities, your university, my university, a thousand-and-more universities around the world, to be an active “solutions network” to help governments, business, and civil society to chart out the pathways to successful sustainable development, and also to be the incubators for the rapid development and rapid fusion of sustainable development technologies. Universities around the world should be in the lead of helping society to find the technical solutions to achieve these goals. However, in many countries, this role of the universities is not yet the normal process. In many parts of the world, universities are not viewed as problem-solvers; they are not viewed as partners of government and business. Of course in Europe and the United States, we have a longer tradition of universities playing such a role, but in many other parts of the world, universities are viewed, at best, as education centers, and at worst as high-cost centers or even places of disruption. Yet, I believe that it is vital for the success of the SDGs everywhere for universities to play a bold, partnership role.

Fortunately, governments around the world understand more and more that they need universities as partners. They understand that universities are actually engines of the local and national economy because innovation hubs around universities are key drivers of job creation and economic growth. Think about Silicon Valley partnering with Stanford, the University of California, Berkley, and the University of California, San Francisco; or think about the wine country in Napa Valley, California with its close association with the University of California, Davis. There are, in fact, hundreds of such examples around the world, in Europe and the United States, in Northeast Asia, Japan, Korea, and China. University-led economic development around innovation can become a major catalyst for SDG achievement and overall economic development.

Still, there is much to do. Currently, there is not one university ranked in the top 500 in the world in the tropical countries of Africa. South Africa has four in the top 500. Clearly, Africa, as a whole, is in need of creating major new innovation hubs and strong, world-class universities.

I want to end by describing an initiative that Secretary General Ban Ki-moon instituted immediately after the Rio+20 Summit: the idea of creating a network of problem-solving made up of the world's universities, which we call the Sustainable Development Solutions Network (SDSN). It operates under the auspices of Secretary General Ban Ki-moon, and I am deeply honored to be the Director of the global network. The idea of SDSN is that the universities around the world can, indeed, step forward and declare: "We have a means of contributing in a notable and important way to the success of the Sustainable Development Goals and we intend to do so."



*Figure 10.* Sustainable Development Solutions Network

The pins on the world map in Figure 10 (above) show the current membership of the Sustainable Development Solutions Network. There are now around 350 universities worldwide in the network. We have national and regional chapters, as well, with regional chapters, including the Mediterranean, Amazon, Southeast Asia, Andes, African Great Lakes, Andes, and other. National SDSN chapters in Korea, China, Japan, Germany, Australia, Nigeria, and many other countries. These are the beginning efforts to create a worldwide, highly active network of leading universities and research institutions. I ask you too to step forward and join the network. The SDGs will benefit hugely from your creative energies and efforts.