WESTool: Helping Cambodia Find Its Way

Cambodia is one of the most rapidly deforesting countries on the planet with a vibrant young population and significant development challenges. It stands at the **crossroads of economic growth and natural resource preservation**. It's a scene that's playing out around the globe, as widescale deforestation shapes the environment, water supply and weather in significant ways.

As private sector interests such as cash crops, textile mills and others compete with Cambodia's need to feed its people and protect its natural resources, how do key decision-makers **evaluate the choices** they must make? How does Cambodia integrate public sector investment with sustainable development goals? How does it create a healthy, productive future?

Winrock International is a global social enterprise that empowers the disadvantaged, increases economic opportunity and sustains natural resources in the U.S. and around the world. Recognizing these critical challenges, **Winrock develops science-based tools that deliver custom analyses and data** to inform decision-makers about the impact of these development choices.

WESTool
WATERSHED ECOSYSTEM SERVICE TOOL

WINROCK INTERNATIONAL

It's all about empowering the decision-makers.

Winrock scientists worked with Cambodians to identify their major development challenges and goals and used this information to develop an easy-to-use online web-based planning tool. The **Watershed Ecosystems Services Tool (WESTool)** uses ESRI software to anticipate changes in water availability, sediment and nutrient loss, water pollution and greenhouse gas emissions to determine the best policies and practices for agriculture and land management. By bringing together many different types of spatial information, modeling its impact and presenting it in a nontechnical format, Winrock has created a web-based tool that uncovers the impact of widespread deforestation and suggests strategies to stop it from continuing.

WESTool pulls together data Cambodians would otherwise have trouble accessing and allows them to evaluate the impact deforestation and other land use changes have on critical ecosystems and determine such changes as:

- How a new dam affects the quality and quantity of water downstream.
- How the trees downed for a new railroad line affect greenhouse gas emissions.

WESTool was completed after two years of research, analysis and stakeholder engagement that culminated in an open source online interactive map. It allows all Cambodians to see the natural resources they have, and it uncovers potential negative consequences of land use change.

WESTool's design, roll-out and user training **included** a **high degree of participation** from government scientists, policymakers and others, first determining Cambodia's needs and then shaping the tool around them.

WESTool was made **with, by and for** the people of Cambodia.

Members of Cambodia's National Ministry of the Environment use WESTool to monitor water pollution and sedimentation in the watersheds that feed the Mekong River and to **predict greenhouse gas emissions from deforestation** in the protected Prey Lang Landscape.

> "The WESTool is a great resource for the Cambodian Ministry of Environment as we create our State of the Environment Report. We plan to use it for environmental reporting and integrate it into the geospatial portal currently under development."
>
> — Mr. Vina Touch, Director of the Department of Geospatial Information Services, Ministry of Environment, Cambodia

Local communes use WESTool to evaluate how dams, roads and other land use decisions will **affect the landscape and to create land-use plans.**

> "By just clicking on the tools in the WESTool homepage, we can see potential impacts regarding land use, deforestation, drought or flood modeling."
>
> — Ley Phanna, chief of the Planning and Supporting Communes Office in Stung Treng Province, Cambodia

As countries like Cambodia start to integrate sustainable development goals into their development planning, the **WESTool can act as a platform to help them plan, implement and monitor key indicators.** The ability to assess SDG baseline conditions and monitor them over time can improve the potential for multi-lateral SDG financing, which can **catalyze sustainable development.**

WESTool has been used to evaluate ecosystem services for **80 percent of Cambodia's land area**, home to 8.7 million people. It provides **verified data** that's difficult to access otherwise.

Winrock **continues to improve WESTool** through the USAID-funded Sustainable Water Partnership, working with Cambodia's Ministry of Environment to promote the tool in environmental impact assessments and commune development plans. It is currently applying the WESTool to assess water security issues in the Stung Chinit watershed north of Phnom Penh.

As stakeholders gain experience and confidence using the WESTool in their planning processes, Winrock is ready to **incorporate additional ecosystem services**, problem domains and economic sectors.

In 2016, the Cambodian Ministry of the Environment honored Winrock International with a **once-in-a-lifetime award**. The Royal Order of Sahametrei, the highest honor the country bestows on foreigners, recognizes outstanding service to the king and people of Cambodia. Winrock was singled out for conserving Cambodia's biodiversity and forest resources, which included its use of WESTool.

Winrock foresees a wellspring of WESTools — a future where those who know development and those who know technology come together to help others find their way.

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For more information, please go to winrock.org/westool.

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